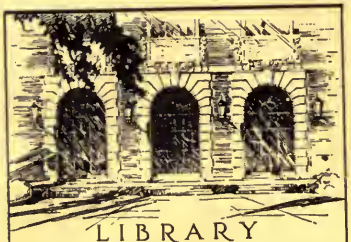

STUDIES OF

CENTRAL AMERICAN PLANTS—II

BY

PAUL C. STANDLEY

CURATOR OF THE HERBARIUM, DEPARTMENT OF BOTANY

AND

JULIAN A. STEYERMARK

ASSISTANT CURATOR OF THE HERBARIUM, DEPARTMENT OF BOTANY

BOTANICAL SERIES
FIELD MUSEUM OF NATURAL HISTORY
VOLUME 22, NUMBER 5
OCTOBER 31, 1940

PUBLICATION 482

branaceis scariosis dilatatis fuscis, 10–15 cm. longis, 2.5–3.5 cm. latis, medio latissimis; scapis elongatis ca. 5-costatis teretibus tenuissimis, 0.5–0.6 mm. diam., apice dilatatis, 2–2.5 mm. latis, stramineis, 30–50 cm. longis, costis obtusis; floribus 2 sessilibus, involucro nullo, fusiformibus 1–1.2 cm. longis anthesi 3.5–5 mm. latis, in fructu 6 mm. latis; bracteis plurimis ca. 14–16 glabris adpressis induratis, omnibus acutis, infimis triangularibus vel ovatis, 1–3 mm. longis, ceteris ovatis vel ovato-lanceolatis 6–7 mm. longis, prope basin ca. 2–3 mm. latis; sepalis 3 ovato-lanceolatis 7–8 mm. longis, bracteas paullo superantibus, brunneis acutis firme chartaceis; antheris 6 linearibus tetragonis 4-locularibus fuscis apice unilocellatis poro unico introrso dehiscentibus, filamentis inferne corollae adnatis 3.5–3.8 mm. longis; ovario triloculari, loculis 7–8-ovulatis, ovulis matrice mucoso circundatis; capsula loculicide dehiscente nitente fulva 9 mm. longa.—Panama: Prov. Coclé: Epiphytic, growing with orchids and ferns in tops of trees 10 meters tall, hills north of El Valle de Antón, alt. 1,000 meters, June 23, 1940, *Paul H. Allen* 2153 (type in Herb. Field Mus.).

The genus *Stegolepis* has been known previously only from South America, in Venezuela and British and French Guiana. All the other species are reported to grow in swamps or moist or boggy spots on the slopes and summits of mountain areas. It is, therefore, a surprise to find that this new species of Panama should have been found as an epiphyte growing "in the tops of trees as tall as 10 meters," according to the notes of the collector.

This species is related to *S. linearis* Gleason and *S. pauciflora* Gleason in possessing 2-flowered heads, but is amply distinct from both species in several characters. From *S. linearis* it differs in its very much longer and broader leaves, more slender scapes, smaller flowers with fewer bracts, and more numerous ovules, while from *S. pauciflora* it may be separated easily chiefly by its leaf sheaths, which are narrowed above and tapering gradually to the blade and not auricled, instead of being abruptly rounded to the summit and auricled, and by its more slender scapes. The family Rapateaceae, rather sparsely represented in South America, chiefly in the Guianas and the Amazon Valley, has not been recorded previously from North America.

PALMAE

Chamaedorea Terryorum Standl., sp. nov.—Planta nana acaulis 30–40 cm. alta, vel ut dicitur usque 75 cm.; folia parva membranacea, petiolo 11–25 cm. longo gracili; vagina angusta

oblique aperta extus dense striato-costata; lamina 21–30 cm. longa 9–15 cm. lata simplex obovato-cuneata, rhachi 12–16 cm. longa, basi acuta, apice profunde excisa, segmentis apice longe angusteque acuminatis, supra in sicco olivacea, subtus vix pallidior, nervis primariis utroque latere ca. 14 tenerrimis subtus prominentibus, nervis tertiariis sat densis et numerosis subtus prominulis; spadices masculi plures longipedunculati cum pedunculo ca. 18 cm. longi, ramis 16 vel ultra gracillimis late patentibus vel subrecurvis usque 6 cm. longis flexuosis, floribus remotis sessilibus sed non immersis, rhachi gracili recta, spathis anguste tubularibus 3 mm. latis; calyx tenuis late cupularis 1.5 mm. latus fere 1 mm. altus, obscure trilobus; petala valvata oblongo-obovata 3 mm. longa in sicco fusca, apice late obtusa vel fere rotundata; stamina petalis duplo breviora.—Panama: Cana–Cuasi trail, Chepigana District, Prov. Darién, alt. 600 meters, March 9, 1940, *M. E. & R. A. Terry* 1452 (type in Herb. Field Mus.).

In general appearance the plant suggests *Chamaedorea Ernesti-Augusti* Wendl., of Mexico and British Honduras, but probably it is not closely related to that, which Burret refers to the genus *Eleutheropetalum*. *C. Terryorum* is one of the smallest plants of the genus, and is notable also for its simple leaves and dwarf, much branched staminate spadices, whose branches are more slender than those of any other *Chamaedorea* I have seen.

LILIACEAE

Anthericum panamense Standl., sp. nov.—Herba erecta glabra ca. 30 cm. alta, radicibus numerosis longis paullo carnosis pallidis; folia magna lataque numerosa tenuia plerumque 22–35 cm. longa et 13–18 mm. lata in sicco laete viridia apicem versus longe sensimque attenuata, basin versus sensim angustata, ima basi in vaginam latam pallidam dilatata, glabra, ca. 16-nervia, nervis tenerrimis prominulis; inflorescentia foliis subaequalis vel interdum paullo longior fere simplex et racemiformis vel ramis 1–2 brevibus aucta, scapo inferne nudo, supra bracteis paucis lineari-lanceolatis viridibus usque 4.5 cm. longis onusto, parte florifera usque 10 cm. longa et ultra dense vel laxe multiflora, pedicellis gracillimis 4–8 mm. longis bene infra medium geniculatis adscendentibus solitariis vel pauci-fasciculatis; perianthium album, segmentis oblongo-linearibus 6–7 mm. longis obscure 3-nerviis persistentibus; filamenta gracillima 1.5–2 mm. longa glabra, antheris oblongis 1.2–1.5 mm. longis; stylus gracillimus fere 3 mm. longus; capsula subglobosa viridis ca. 4 mm.

alta et aequilata subprofunde triloba, apice depressa; semina pauca nigra angulata ca. 1.5 mm. diam. dense minutissime punctata.—Panama: Hills north of El Valle de Antón, Prov. Coclé, alt. 1,000 meters, July 14, 1940, *Paul H. Allen* 2195 (type in Herb. Field Mus.).

Among Central American species of *Anthericum* this is isolated by its large, very wide, and thin leaves, and by the small, white, rather than yellow, flowers, with extremely small anthers.

ZINGIBERACEAE

Renealmia foliifera Standl., sp. nov.—Herba erecta ca. metralis; folia pauca radicalia longipetiolata, petiolo fere ad apicem vaginato, vagina dense striata; lamina magna 12 cm. lata et ultra, apice acuminata vel rotundata et breviter abrupteque acuminata, basi acuta, glabra, arcte nervosa; pedunculus petiolis aequilongus gracilis prope apicem folio 1 ceteris conformi et aequimagno onustus; panicula spiciformis ca. 13 cm. longa erecta, rhachi crassa sparse pilosula vel fere glabra; bracteae oblongae ca. 7-nerviae apice obtusae vel rotundatae viridescentes ca. 2 cm. longae glabrae, bracteolis conformibus sed brevioribus; flores ca. 5 mm. longe pedicellati in concinnos paucifloros brevissime pedunculatos dispositi, pedicellis dense hirtellis; ovarium dense hirtellum late obovoideum 3.5 mm. longum basi obtusum; calyx ca. 7 mm. longus anguste campanulatus irregulare trilobus, lobis brevibus apice rotundatis.—Panama: Rain forest, crest of Cana–Cuasi trail, Chepigana District, Prov. Darién, alt. 1,650 meters, March 15, 1940, *M. E. & R. A. Terry* 1591 (type in Herb. Field Mus.).

The flowers are described as orange. The material is not too well preserved, particularly as regards the leaves. The plant seems to represent a species different from all those reported previously from southern Central America, although the inflorescence in general appearance is much like that of *R. concinna* Standl., of the same general region. The inflorescence arises from the base of the plant with the leaves, and is distinguished by the greatly elongate peduncle and especially by the large leaf borne from the upper part of the peduncle.

ULMACEAE

Phyllostylon rhamnoides (Poisson) Taub. Oesterr. Bot. Zeitschr. 40: 409. 1890. *Samaroceltis rhamnoides* Poisson, Journ. de Bot. 1: 256. 1887.—This tree, which furnishes a rather valuable wood, has been recorded in continental North America from the Mexican states of Tamaulipas, San Luis Potosí, Hidalgo, and Yuca-

tan, besides occurring in Cuba and Hispaniola, and in some of the drier regions of Brazil and adjacent countries. It has been found recently in Central America: Guatemala: Dept. Chiquimula: Rocky (igneous) outcrops along gorge of Río Chiquimula, between Santa Bárbara and Petapilla, 4–6 miles north of Chiquimula, alt. 350–420 meters, *Steyermark* 30237; a shrub of 3 meters. The specimens are sterile, but clearly referable here.

ARISTOLOCHIACEAE

Aristolochia Steyermarkii Standl., sp. nov.—Arbor 6-metralis, ramis teretibus gracilibus brunnescenti-fuscis glabris nodosis, internodiis plerumque 2–4.5 cm. longis; folia majuscula breviter petiolata membranacea, petiolo gracili 1–1.5 cm. longo glabro; lamina anguste oblonga vel lanceolato-oblonga vulgo 15–23 cm. longa et 4–6 cm. lata breviter vel longiuscule acuminata, acumine angusto, basi paullo inaequali obtusa, interdum subcontracta, glabra, supra in sicco fuscescenti-viridis sublucida, costa nervisque fere planis, subtus pallidior, costa tenera prominente, nervis lateralibus utroque latere ca. 7 teneris prominentibus arcuatis angulo lato vel latiusculo adscendentibus, venis prominulis laxissime reticulatis; flores axillares solitarii, pedunculo fructifero gracili 2–3 cm. longo glabro; capsula angusta glabra lucida, valvis 6 post dehiscentiam valde recurvis 4–4.5 cm. longis ca. 6 mm. latis, seminibus ut videtur numerosis.—Guatemala: Dept. Quezaltenango: Along Quebrada San Gerónimo, Finca Pireneos, lower south-facing slopes of Volcán de Santa María, between Santa María de Jesús and Calahuaché, alt. 1,300–2,000 meters, January 1–2, 1940, *Julian A. Steyermark* 33455 (type in Herb. Field Mus.).

The most closely related species is *Aristolochia arborea* Linden, which has abundant although very short pubescence. In that species, too, the flowers are borne in small panicles on naked branches below the leaves.

POLYGONACEAE

Polygonum aviculare L. Sp. Pl. 362. 1753.—While Britton and Brown in the *Illustrated Flora of the Northern States and Canada* give the range of this species as "common almost throughout North America, Asia, and Europe," their statement is certainly not true for a good many wide areas in North America. In Mexico the plant, doubtless introduced from Europe, is either rare or else not collected, and it has not been reported for Central America, except for a single collection from Costa Rica. The following collections of the common

knotgrass are therefore worth placing on record: Mexico: Chuichupa, Chihuahua, August, 1937, *Harde LeSueur* 1313. El Rosario, Distrito Federal, August, 1936, *L. H. MacDaniels* 626. Maltrata, Veracruz, May, 1937, *Matuda* S25.—Guatemala: Dept. Guatemala: On sandbar, erect, rare, large arroyo south of Guatemala on road to Amatitlán, alt. 1,380 meters, *Standley* 62846.—Dept. Chimaltenango: Patzicía, in waste ground, *Standley* 61477; procumbent; locally abundant.—Dept. Quezaltenango: Olintepeque, alt. 2,415 meters, in edge of street, *Standley* 66003; called locally Tabaco. Near Quezaltenango, roadside, alt. 2,300 meters, *Standley* 66427; plants erect or prostrate, common. On sand flat, eastern side of Río Samalá opposite Santa María de Jesús, alt. 1,500 meters, *Steyermark* 35068; plants prostrate except for the central stem, which is erect; flowers pink or rosy; leaves grayish blue-green.—Costa Rica: Tierra Blanca, April, 1935, *J. M. Orozco* 302. In Costa Rica the plant probably is of recent introduction, perhaps with grass seed. In Guatemala, like so many other European weeds, it has the appearance of having been long established, and has become a common weed in many localities of the Department of Quezaltenango.

Polygonum longiocreatum Bartlett, Proc. Amer. Acad. 43: 51. 1907.—The species was based on a single collection from Gualán, Dept. Zacapa, Guatemala, *C. C. Deam* 374. It has been noted from the vicinity of Tela, Dept. Atlántida, Honduras, and several recent Guatemalan collections extend widely its previously known range: Dept. Zacapa: Near Zacapa, alt. 225 meters, sandy river bed, *Standley* 72091; plants erect, the flowers deep pink.—Dept. Chiquimula: Margin of rivulet, in mud, valley of Río Chiquimula, 1.5 miles northeast of Chiquimula, alt. 400 meters, *Steyermark* 30127; inflorescence drooping-arching; flowers pink-rose and white.—Dept. San Marcos: Edge of stream, Río Cabús, near Malacatán, alt. 300 meters, *Standley* 68878; plants erect, 60 cm. high; flowers pale pink.

AMARANTHACEAE

Alternanthera laguroides Standl. in Standl. & Calderón, Lista Prel. Pl. Salvador 74. 1925. *Achyranthes laguroides* Standl. Contr. U. S. Nat. Herb. 18: 90. 1916.—In *North American Flora* (21: 143. 1917) this species is reported only from Costa Rica, whence it was described, but it has since been recorded for Salvador. Several collections now available show that it ranges somewhat farther north and south: Guatemala: Dept. Guatemala, in 1940, *Ignacio Aguilar* 454.—Panama: Prov. Bocas del Toro: Lincoln Creek, in 1924, *V. C.*

Dunlap 426; a vine. Banks of Changuinola River, March, 1924, climbing, *Dunlap* 515.

CARYOPHYLLACEAE

Cerastium guatemalense Standl. Bot. Ser. Field Mus. 17: 244. 1937.—The type is *J. R. Johnston* 816 from Volcán de Agua, Dept. Sacatepéquez, Guatemala. Several additional collections have been made recently on the Guatemalan volcanoes: Dept. Sacatepéquez: Pine forest, scarce, slopes of Volcán de Agua above Santa María de Jesús, alt. 2,250–3,000 meters, *Standley* 65268.—Dept. Chimaltenango: Slopes of Volcán de Acatenango, above Las Calderas, alt. 2,700–2,900 meters, in open pine forest with dense tussock grass, *Standley* 61872, 61893; common in this region.—Dept. Quezaltenango: Moist pine slopes well up toward the summit of Volcán de Santa María, alt. 4,000 meters, *Steyermark* 34153.—Dept. San Marcos: Dry pine forest, between San Sebastián and summit of Volcán de Tajumulco, alt. 3,800–4,600 meters, *Steyermark* 35517.

Spergula arvensis L. Sp. Pl. 440. 1753.—While this European plant has becone established as a weed in various parts of the United States and Canada, it has not, so far as we find, been reported from Central America. Two collections are available from Guatemala: Dept. Quezaltenango: Cerro La Pedrera, south of Quezaltenango, alt. 2,400 meters, *Standley* 66463; abundant in an old field. Along eastern side of Río Samalá, opposite Santa María de Jesús, on sand flat, alt. 1,500 meters, *Steyermark* 35058. The plant is thoroughly established in the Department of Quezaltenango, and plentiful in some localities.

MAGNOLIACEAE

Magnolia Allenii Standl., sp. nov.—Arbor 30-metralis, trunco ca. 1 m. diam., ubique glabra vel glabrata, ramis crassis subteretibus vel obtuse subangulatis, junioribus ochraceis vel fusco-ochraceis, internodiis brevibus; stipulae a petiolo liberae 1.7–2.5 cm. longae extus minute subtuberculatae caducae; folia magna persistentia petiolata coriacea, petiolo crasso 2.5–5 cm. longo supra plano, subtus rotundo-convexo; lamina elliptico-ovata usque late elliptica 13–26 cm. longa atque 8.5–15 cm. lata vel ultra, apice obtusa vel rotundata, basi obtusa usque late rotundata et saepe breviter subito contracta et ad petiolum subdecurrens, interdum apicem versus paullo angustata, sed saepius medio latissima, supra in sicco griseo-brunnescens fere opaca, costa nervisque plus minusve prominentibus, venis prominentibus et arcte reticulatis, subtus fere concolor lucida, costa

solemniter elevata, nervis lateralibus utroque latere ca. 11 prominentibus gracilibus angulo semirecto vel latiore adscendentibus subarcuatis irregularibus prope marginem irregulare conjunctis, venis prominentibus arcte reticulatis; pedunculi crassissimi ca. 4.5 cm. longi 5-annulati, alabastro ante anthesin bracteis 2 connatis 3.5 cm. longis induratis vel in vivo carnosis incluso, bracteis glabris in sicco fusco-ferrugineis; sepala exteriora ca. 4 cm. longa et aequilata in sicco indurata crassaque; carpella fructus juvenilis ca. 25 glabra.—Panama: Hills north of El Valle de Antón, Prov. Coclé, alt. 1,000 meters, July 14, 1940, *Paul H. Allen* 2200 (type in Herb. Field Mus.).

From Central America three other species of *Magnolia* have been described. The only one of these known from Panama is the recently described *M. sororum* Seibert (Ann. Mo. Bot. Gard. 25: 828. 1928) of Chiriquí, which differs in its abundant pubescence, very acute, much smaller leaves, and more numerous carpels. *Magnolia Allenii* appears to be an unusually well marked species, particularly notable for the petioles, considerably longer than those of other Central American species, and conspicuously flattened on the upper side, a character I have not observed in any other tropical American species. Mr. Allen supplies the following notes: A tree to 30 meters in height, tall, very straight, and handsome; bark gray; usual trunk diameter about 1 meter just above the buttresses, nearly 15 meters to the first branches; flowers white, fleshy.

MONIMIACEAE

Mollinedia darienensis Standl., sp. nov.—Frutex 1–2.5 m. altus, ramis gracilibus glabris in sicco fuscescentibus, internodiis brevibus rimosis; folia modica breviter petiolata chartacea, petiolo ca. 1 cm. longo glabro vel glabrato; lamina elliptico-oblonga vel lanceolato-oblonga 14–16 cm. longa 4.5–6 cm. lata subabrupte longiuscule acuminata, basi acuta, supra medium remote adpresso-serrata, serraturis utroque latere ca. 7, supra in sicco fuscescens sublucida glabra, costa nervisque non elevatis, subtus paullo pallidior brunnescens, primo ut videtur sparse sericea sed cito glabrata, in statu adulto fere omnino glabra, costa tenera prominente, nervis lateralibus utroque latere ca. 7 obliquis angulo lato adscendentibus teneris subarcuatis, venis prominulis laxe reticulatis; inflorescentia terminalis sessilis breviter racemosa ut videtur 3–4-flora, pedicellis fructiferis incrassatis 1–1.7 cm. longis glabratis; receptaculum in statu fructifero ca. 1 cm. latum; carpella pauca sessilia ellipsoidea basi et apice rotundata ca. 1.5 cm. longa et 1 cm. lata laevia.—Panama: Cana-

Cuasi trail, Chepigana District, Prov. Darién, alt. 600 meters, March 10, 1940, *M. E. & R. A. Terry* 1456 (type in Herb. Field Mus.).

CRUCIFERAE

Draba volcanica Benth. Pl. Hartweg. 82. 1841.—The type was found by one of the pioneer collectors of Guatemalan plants, Hartweg, in the crater of Volcán de Agua. Mexican material has been referred to the species, but in view of the critical nature of most *Draba* species, its identity is somewhat doubtful. Several recent collections of the species have been made in Guatemala and adjacent Chiapas, where the plant is confined to the limited alpine areas on the tops of the higher volcanoes: Mexico: Volcán de Tacaná, Chiapas, alt. 4,000 meters, *Matuda* in August, 1938.—Guatemala: Dept. San Marcos: Summit of Volcán de Tajumulco, in shade, crevices of north-facing, rocky summit of the dome, alt. 4,600 meters, *Steyermark* 35538. Between San Sebastián and summit of Volcán de Tajumulco, common from top of slope in pine woods to summit of the rocky, alpine dome, alt. 3,800–4,600 meters, *Steyermark* 35521.—Dept. Quezaltenango: Volcán de Santa María, among rocks on or near the summit, alt. 3,768 meters, *Standley* 67730; *Skutch* 850, the flowers yellow.—Dept. Sacatepéquez: Crater of Volcán de Agua, July, 1937, *J. R. Johnston* 801.

CAPPARIDACEAE

Capparis quiriguensis Standl. Proc. Biol. Soc. Wash. 37: 52. 1924.—The type was found in a wooded swamp near Quiriguá, Guatemala, *Standley* 24048. Apparently the plant does not range widely, nor is it common, for at present it is known only from the Department of Izabal: Near Quiriguá, in swamp forest, alt. 75 meters, *Standley* 72290, 72251; a shrub or tree of 3–6 meters; stamens white or creamy white. Swampy jungle in valley of tributary of Río San Francisco del Mar, two miles northeast of Hopi, 12 miles east of Entre Ríos, near sea level, *Steyermark* 39769; a shrub; leaves subcoriaceous, dark green above, pale bluish green beneath. Valley of Río Motagua between Los Amates and Quiriguá, alt. 80 meters, *Steyermark* 38332; a tree of 6 meters.

Capparis Tuerckheimii Donn. Smith, Bot. Gaz. 46: 109. 1908.—Originally collected at Panzal, Baja Verapaz, Guatemala, *Tuerckheim* II.1746, the species must be rare in Guatemala, and no recent collections of it from that country are available. It has been collected several times in Honduras, however, and may now be placed on record from the State of Tabasco, Mexico, the determina-

tions by Dr. C. L. Lundell: Mercedes, Balancán, *Matuda* 3009; a shrub of 2–3 meters; flowers white. Reforma, Balancán, *Matuda* 3185; a shrub.

SAXIFRAGACEAE

Phyllonoma cacuminis Standl. & Steyerm., sp. nov.—Arbor humilis omnino glabra, ramis gracillimis pallidis in sicco subangulatis et striatis flexuosis, internodiis brevibus; folia breviter petiolata subcoriacea, petiolo gracili 6–8 mm. longo; lamina anguste oblongo-lanceolata 5–8 cm. longa 1.3–2.2 cm. lata, subabrupte longe angusteque caudato-acuminata, acumine usque 1.5 cm. longo saepe falcato, basi acuta, supra in sicco griseo-viridis, costa impressa, nervis venisque prominulis, sublucida, subtus fere concolor, costa crassiuscula prominente, nervis lateralibus utroque latere ca. 13 tenerrimis prominentibus angulo recto vel fere recto divergentibus, prope marginem arcuato-junctis, venulis prominulis arcte reticulatis, margine integro vel remote minuteque serrulato; inflorescentia e pagina superiore laminae basi acuminis nascens parva pauciflora laxa, ramis pedicellisque incrassatis, pedicellis 1 mm. longis vel paullo ultra; hypanthium obovoideum 1 mm. longum; sepala triangulari-ovata obtusa 0.8 mm. longa reflexa.—Guatemala: Dept. Zacapa: Cloud forest in ravine bordering Quebrada Alejandria, summit of Sierra de las Minas, vicinity of Finca Alejandria, alt. 2,500 meters, October 13, 1939, *Julian A. Steyermark* 29870 (type in Herb. Field Mus.).

The species of *Phyllonoma*, a genus remarkable because its small inflorescences arise from the upper leaf surface near the apex of the blade, are all much alike and, as generally treated, separated by "feeble" characters. The present one is no more distinct than the rest, but it does seem to differ decidedly from *P. laticuspis* (Turcz.) Engler, the only other species of northern Central America, in its narrow, entire or only remotely and minutely serrulate leaves, which are thicker than in *P. laticuspis*.

Phyllonoma laticuspis (Turcz.) Engler in Engl. & Prantl, Pflanzenfam. 3, Abt. 2a: 87. 1890. *Dulongia laticuspis* Turcz. Bull. Soc. Nat. Moscou 31, pt. 1: 454. 1858.—In *Trees and Shrubs of Mexico* (Contr. U. S. Nat. Herb. 23: 313. 1922) this tree was reported to range from Durango to Chiapas in Mexico. Recently it has been found to extend to extreme western Guatemala: Dept. San Marcos: Wet forest, Barranco Eminencia, above San Rafael Pie de la Cuesta, alt. 2,100–2,400 meters, *Standley* 68669; a tree of 4.5–6 meters; leaves very lustrous. Dry, upper, forested slopes near boundary line,

barrancos tributary to and bordering Río Vega, between San Rafael and Guatemala-Mexico boundary, Volcán de Tacaná, alt. 2,500–3,000 meters, *Steyermark* 36365; leaves firm, membranaceous, rich, dark green and shining above, grass-green beneath. Same locality, *Steyermark* 36299; a tree of 9 meters.

ROSACEAE

Licania costaricensis Standl. & Steyerm., sp. nov.—Arbor elata, ramulis crassis teretibus ut videtur interdum ferrugineis, novellis dense pilis rigidulis ochraceis patulis hirsutis, internodiis brevibus; stipulae deciduae, non visae; folia majuscula breviter petiolata coriacea, petiolo crasso ca. 8–10 mm. longo dense breviter hirsuto vel glabrato; lamina late elliptica, rotundo-obovata vel fere obovato-orbicularis 8–14 cm. longa 7–11 cm. lata, apice late rotundata vel interdum abrupte breviter apicata, basi acuta vel subacuta et interdum paullo contracta, supra in sicco fusco-brunnescens lucida glabra vel glabrata, costa nervisque ut quoque venis impressis, pagina ita plus minusve bullata, subtus fere concolor, ad nervos venasque puberula vel glabrata, secus costam sparse adpresso-hirsuta, costa valde elevata, nervis lateralibus utroque latere ca. 9 teneris insigniter elevatis subarcuatis juxta marginem arcuato-conjunctis angulo latiusculo adscendentibus, venis valde prominentibus laxe reticulatis; paniculae parvae axillares solitariae vel fasciculatae simpliciter pinnato-paniculatae vix ultra 5.5 cm. longae sessiles pauciramosae dense multiflorae, ramis gracilibus dense puberulis et hispidulis, floribus sessilibus dense glomeratis minutis, bracteis omnibus minutis inconspicuis; flores campanulati 1.5–1.8 mm. alti et fere aequilati, hypanthio 0.7–0.8 mm. alto hirtello subcoriaceo, intus prope basin hirtello; calycis lobi deltoideo-ovati acutiusculi 0.8–1 mm. longi, basi 1 mm. lati, utrinque hirtelli, erecti; petala cum lobis calycis alternantia prope marginem hypanthii inserta, obovata obtusa basi solemniter angustata, utrinque dense puberula, 0.8–1 mm. longa, prope vel paullo supra medium 0.6 mm. lata, quam lobis calycis tenuioribus; stamina perigyna cum petalis alternantia, antheris introrsis ovalibus vel subglobosis 2-locularibus crassiusculis 0.4–0.5 mm. longis, filamentis 0.5 mm. longis superne incurvis, in disco annulari lobato membranaceo insertis, lobis disci lobos calycis fere aequantibus; stylus gynobasilaris 1.2 mm. longus subulatus, stigmate simplici; ovarium ovale vel late oblongum dense hirtellum 0.3 mm. longum 2-ovulatum.—Costa Rica: In pasture on hill, Villa Quesada, Cantón de San Carlos, Prov. Alajuela, alt. 825 meters, March 14, 1939, *Austin Smith* F1779 (type in Herb. Field Mus.).

"A tree with well rounded crown; bark dark brown, irregular; leaves thickly membranaceous, almost rigid, the venation very prominent, green, not shining above; inflorescence gray-green." Although evidently a member of the genus *Licania*, the present species is so unlike other members of the genus that its relationship at first was not suspected. It has no resemblance to any of the few other species of *Licania* occurring in Central America, and may be recognized at once by its broad, almost glabrous, very conspicuously veined leaves, as well as by its small inflorescences.

Prunus barbata Koehne, Bot. Jahrb. 52: 284. 1915.—The type and the only material reported heretofore for the species, apparently, is *Bernoulli & Cario* 2916 from "Cumbre de Xuipach," Guatemala. One recent Guatemalan collection seems to represent the species: Dept. Suchitepéquez, southwestern, lower slopes of Volcán de Zunil, vicinity of Finca Montecristo, southeast of Santa María de Jesús, alt. 1,200–1,300 meters, January, 1940, *Steyermark* 35262; a tree of 7.5–10 meters; leaves shining above and rich, dark, bright green, pale green beneath; calyx tube greenish white.

Prunus brachybotrya Zucc. Abh. Acad. Muenchen 2: 348. 1837.—The tree has been known from various localities and states in southern Mexico, but has not been reported, so far as we know, from Central America. The following Guatemalan collections are referable here, and several sterile specimens from the same country probably are conspecific: Dept. Quiché: Finca San Francisco, Cotzal, alt. 1,110 meters, *Skutch* 1860; a tree of 12 meters, the trunk 37 cm. in diameter, with rough, furrowed bark.—Dept. San Marcos: Volcán de Tajumulco, between Finca El Porvenir and Loma Corona, wooded slopes, alt. 1,300–2,000 meters, *Steyermark* 37742; a tree of 6 meters; leaves subcoriaceous, rich grass-green above, silvery green beneath.

Prunus rhamnoides Koehne, Bot. Jahrb. 52: 283. 1915.—The type is *Heyde & Lux* 3090 from San Miguel Uspantán, Dept. Quiché, Guatemala, at 2,000 meters. At present the species is known only from Guatemala, but it may well extend into Chiapas, since in the Occidente of Guatemala it approaches closely the Mexican border. Guatemala: Dept. Chimaltenango: Cerro de Tecpám, region of Santa Elena, dense *Cupressus* forest, alt. 2,700 meters, *Standley* 58711; a tree of 9–15 meters, with broad crown; common; flowers white.—Dept. Quiché: Nebaj–Aguacatán trail, in hedgerow, alt. 2,430 meters, *Skutch* 1915; a pollarded tree, the trunk 60 cm. in diameter.—Dept. San Marcos: Volcán de Tajumulco, along the road between San Sebastián at km. 21 and km. 8, 8–19 miles northwest

of San Marcos, alt. 2,700–3,800 meters, *Steyermark* 35634; a tree of 12 meters; leaves subcoriaceous, rich green above, pale beneath; fruit oblong-ovoid, dull reddish.

Prunus Salasii Standl. Trop. Woods 32: 14. 1932.—At the time *Prunus Salasii* was published, little or nothing was known about it, and there was available only a single specimen, collected in cafetales of Finca El Pintado in the edge of Antigua, Dept. Sacatepéquez, Guatemala, at an elevation of 1,500 meters, by Jorge García Salas, formerly of the Dirección de Agricultura of Guatemala. The species is a very distinct one, and it was published with some suspicion that it might have been introduced into Guatemala, although its collector stated that it was believed to be a native of the mountains of central Guatemala. Too often such statements about cultivated trees of Central America prove erroneous, but in this instance Sr. Salas was quite correct.

The tree is a large, tall one, and makes a handsome shade tree. It grows rapidly, and for both these reasons, perhaps, it is planted commonly in fincas and parks of the central departments. There are numerous fine trees in Antigua, and some in the capital, and doubtless in other parts of the uplands. It probably was Sr. Salas who forwarded seeds of the tree—known in Guatemala by the name Carreto, which would suggest its wood was used in construction of ox carts—to the U. S. Department of Agriculture, and that organization seems to have distributed seeds rather widely. A couple of years ago the senior author received from Australia a letter of inquiry, from a gentleman who stated that he had some of the trees, and wished to know how long it would be before they were fruiting. The fruits are disappointing, although, as might be suspected from their exceptionally large stones, they are very large. When ripe, they are dark red, but the flesh is scant and rather hard, and so extremely bitter as to be altogether inedible. The following collections of the tree have been made lately in Guatemala: Dept. Guatemala: Garden of Don Mariano Pacheco, Guatemala, *Standley* 63116; leaves from a seedling plant.—Dept. Sacatepéquez: Hills of Finca Carmona, southeast of Antigua, alt. 1,600–1,800 meters, damp forest, *Standley* 63738, 63669; a large or very large tree. Above Las Calderas, damp barranco, alt. 1,800 meters, *Standley* 59967; a tree of 9 meters. Antigua, planted in a finca, alt. 1,500 meters, *Standley* 59958; a tree about 9 meters high.—Dept. Quezaltenango: Volcán de Santa María, between Santa María de Jesús and Las Mojadas, alt. 1,500–3,000 meters, *Steyermark* 33947; a tree of 9 meters. The

last collection is sterile, and may not be properly referable to *P. Salasii*, but the leaves seem quite characteristic of the species.

LEGUMINOSAE

Bauhinia sericella Standl. Carnegie Inst. Wash. Publ. 461: 60. 1935.—The only collection thus far known from British Honduras is the type, *Schipp* 1197, from Jacinto Creek. Several recent collections indicate an extension of range into Guatemala: Dept. Izabal: Near Puerto Barrios, in *Manicaria* swamp, *Standley* 73167; a small vine; in wet thicket, a woody vine, *Standley* 73064. Wet forest near Entre Ríos, alt. 18 meters, *Standley* 72655; a small vine. Between Bananera and La Presa in Montaña del Mico, alt. 50–150 meters, *Steyermark* 39186; local name Calzoncillo; leaves firmly membranaceous, rich green above, gray beneath.

Caesalpinia exostemma DC. Prodr. 2: 483. 1825.—The tree ranges widely, northward to Oaxaca and southward along the Pacific coast of Central America, but heretofore it has been reported as far south only as Nicaragua, and it was not listed in the *Flora of Costa Rica*. Recently, however, it has been collected on the Pacific coast of Costa Rica: Boca de La Barranca, Puntarenas, March, 1940, *M. Quirós C.* 937.

Cassia pentagonia Mill. Gard. Dict. ed. 8. *Cassia* No. 18. 1768. —In *North American Flora* (23: 242. 1930) Britton and Rose cite this name as a synonym of *Emelista Tora* (L.) Britt. & Rose, i.e. *Cassia Tora* L. Somewhere something may have been published to justify this reduction, but *C. pentagonia* was treated as a distinct species by Bentham in *Flora Brasiliensis* (15, pt. 2: 114. *pl. 34, f. II.* 1870) and in his *Revision of the genus Cassia* (535. 1871). Bentham in the two places cited reports the species from the State of Minas Geraes, Brazil, and from "Central America," whence originally described. The plant illustrated by Bentham in *Flora Brasiliensis* is a very distinct species, in habit similar to *C. Tora*, but with an altogether distinct fruit, noteworthy for its four narrow but conspicuous, longitudinal wings. The following collections of *C. pentagonia* have been made recently in Guatemala: Dept. Guatemala: Estancia Grande, alt. 600 meters, dry thicket, an herb 60–90 cm. high, the plants in fruit and all dried, December, 1938, *Standley* 59187. Near Fiscal, dry, rocky thicket, an herb of 60 cm., alt. 1,100 meters, December, 1938, *Standley* 59609.—Dept. Chiquimula; Margin of lake at La Laguna, alt. 500 meters, October, 1939, *Steyermark* 30719; flowers yellow; local name Frijolillo blanco. The plants

found in the Department of Guatemala grew along roads, and looked as if they might have been introduced, but both the localities are somewhat remote ones, and it is more probable that the species is a native of Guatemala and perhaps other parts of Central America, but rare.

Crudia lacus Standl. & Steyerm., sp. nov.—Arbor praeter flores omnino glabra, ramulis fusco-ferrugineis teretibus, novellis viridibus gracilibus; folia modica 4-foliolata, rhachi cum petiolo 3–4 cm. longo gracili viridi, petiolulis ca. 3 mm. longis; foliola paullo inaequalia, inferiora aliquanto minora subcoriacea, plerumque lanceolato-oblonga interdum ovato-oblonga 5–9.5 cm. longa 2–3.8 cm. lata, apicem acutum vel subacuminatum versus angustata, apice ipso obtusissimo, basi paullo inaequalia obtusa vel subrotundata ima basi abrupte contracta et brevissime decurrentia, supra in sicco viridia sublucida, costa anguste subimpressa, nervis venisque prominulis arcte reticulatis, subtus pallidiora et lutescentia vel brunnescentia, costa tenera prominente, nervis lateralibus tenerrimis brevibus angulo lato abeuntibus fere rectis remote a margine junctis, venis prominulis arcte reticulatis; racemi terminales solitarii sat dense multiflori breviter pedunculati, parte florifera 5–6 cm. longa, bracteis minutis, pedicellis rectangule patulis gracilibus viridibus rectis 3–4 mm. longis; sepala cito decidua rotundo-ovata apice obtusa vel rotundata extus sparse pilis laxis subadpressis pilosa, parte persistente basali calycis fere 2 mm. lata; ovarium brevissime stipitatum dense pilosulo-tomentosum oblongo-ovoideum, stylo glabro 5 mm. longo.—Guatemala: Dept. Izabal: Shores of Lake Izabal, on side opposite San Felipe, between Punta Dos Reales and Punta de Lechuga, near sea level, April 17, 1940, *Julian A. Steyermark* 39611 (type in Herb. Field Mus.).

From Central America there have been described only two species of the genus, *Crudia acuminata* Benth. of the Pacific coast of Nicaragua, and *C. Choussyana* Standl. of Salvador. It would naturally be expected that a tree from the Atlantic coast would prove to be a different species, and such seems to be the case, in spite of the scant data available regarding the described species. *C. Choussyana* differs from *C. lacus* in having leaves with 6–8 leaflets. In *C. acuminata*, as described, the leaflets are 6 or fewer and narrowly acuminate, and the racemes are described as 15 cm. long. While collection of further material of the genus may show that only a single species occurs in Central America, it is more likely that all three species will prove to be valid.

NOTES ON THE NORTH AMERICAN SPECIES OF DUSSIA

The genus *Dussia* Krug & Urban was described in 1892 and based upon a single species, *D. martinicensis*, of Martinique. Since that time the group has grown slowly, until 10 species are listed for it, their range extending from southern Mexico to Haiti, Martinique, French Guiana, the Amazon Valley of Brazil, and eastern Peru. All the species that we have seen—and that includes all the published ones except *D. sanguinea* Urban & Ekman of Haiti and *D. Lehmannii* Harms of Colombia—are much alike in general appearance, so much so that if all had been collected in one limited area, probably no one would give them a second glance, or suspect that more than a single slightly variable species was represented. As it is, the species have been established on very slight supposed differences, and it seems likely that when ample material has been assembled in one place for study, at least some will have to be reduced to synonymy. Amshoff, for instance (Medd. Bot. Mus. Utrecht 52: 50. 1939), has reduced two species described by Harms and Ducke to the synonymy of *Dussia discolor* (Benth.) Amsh.

The specimens of *Dussia* that have accumulated from North America are rather numerous, but few of them are in good condition for comparison. The best and perhaps the only characters for separating the species are found in the flowers, and of the 23 sheets at hand, only seven bear good flowers. It may be stated that all the South American material consulted seems to be specifically distinct from the North American, but it is probable that other South American species, such as the Peruvian *D. Tessmannii* Harms, will fall into synonymy. The species now known from North America, of which we have seen material, two of them of rather doubtful systematic standing, are the following:

Dussia martinicensis Krug & Urban in Engl. & Prantl, Pflanzenfam. 3, Abt. 3: 193. 1892.—Known only from Martinique, where it was collected by Duss.

Dussia mexicana (Standl.) Harms, Repert. Sp. Nov. 19: 294. 1924. *Ormosia mexicana* Standl. Contr. U. S. Nat. Herb. 23: 436. 1922.—The following specimens, all from Mexico, are at hand: Zacuapam, Veracruz, in 1913, *Purpus* 6326, type collection. On hillsides and in cafetal, Mirador, Veracruz, only about four trees found, March, 1935, *Purpus* 16459. Mirador, April, 1842, *Liebmann* 5355 (detached leaflets). When *Ormosia mexicana* was published, attention was called to its similarity to *Dussia martinicensis*. This similarity is so great that the two scarcely would have been sepa-

rated except upon geographic grounds. Harms, in transferring *Ormosia mexicana* to *Dussia*, states that it differs from *D. martinicensis* in its smaller and narrower bracts and small bractlets. No difference is apparent in the bractlets, but the bracts of *D. mexicana* are slightly shorter and narrower than those of the Martinique plant. It is suspected that a future monographer of the group, with ampler material for comparison, will find some difficulty in keying apart the two supposed species.

Dussia cuscatlanica (Standl.) Standl. & Steyerm., comb. nov. *Cashalia cuscatlanica* Standl. Journ. Wash. Acad. Sci. 13: 441. 1923. *Dussia grandifrons* I. M. Johnston, Journ. Arn. Arb. 19: 118. 1938. —Of this tree the following material has been examined, that from the United States National Herbarium having been lent for study through the courtesy of the Curator, Dr. William R. Maxon: Guatemala: Dept. Quezaltenango: Colomba, in coffee plantation with original forest shade, alt. 870 meters, December, 1934, in flower, *Skutch* 2027, type collection of *D. grandifrons;* a tree of 30 meters with open, spreading crown and smooth, gray bark; flowers pale pink with a greenish streak along center of the standard. Rich, forested slopes along Quebrada San Gerónimo, Finca Pireneos, lower, south slopes of Volcán de Santa María, alt. 1,300–2,000 meters, *Steyermark* 33329; local name Palo de tigre; a tree of 7.5 meters. Lower slopes, high barranco along Río Samalá, between Santa María de Jesús and Calahuaché, alt. 1,200 meters, *Steyermark* 33862; a sapling 3 meters tall; leaves firmly membranaceous, rich green above, pale green beneath.—Dept. San Marcos: Wet thicket, Río Ixpal, below Rodeo, alt. 750 meters, *Standley* 68736; a sterile shrub. Middle portion of slopes along barranco, above Finca El Porvenir, lower, south slopes of Volcán de Tajumulco, alt. 1,300–1,500 meters, *Steyermark* 37214; local name Soycol de monte; a tree of 9 meters, sterile; leaves all at the ends of the branches, which are bare below. —Dept. Suchitepéquez: Top of ridge slope, southwestern, lower slopes of Volcán de Zunil, near Finca Montecristo, southeast of Santa María de Jesús, alt. 1,200–1,300 meters, *Steyermark* 35244; a sterile shrub.—Salvador: Common in forest, Sierra de Apaneca, in the region of Finca Colima, Dept. Ahuachapán, January, 1922, *Standley* 20197; type of *Cashalia cuscatlanica;* local name Cashal; a large, deciduous tree, furnishing valuable wood. Colina de Santa Tecla, in 1924, *Calderón* 2070; local name Cashal; in 1923, *Calderón* 1752; a very large tree. Comasagua, December, 1922, *Calderón* 1379; a tree as large as *Sterculia apetala.*—Costa Rica: In forest, La

Palma de San Ramón, alt. 1,275 meters, November, 1925, *Alberto Brenes* 4627 (sterile, but probably referable here).

The genus *Cashalia* was based upon a single species, *C. cuscatlanica*, and later a second species, *C. panamensis*, was described. When published, *Cashalia* was compared with *Tounatea*, i.e. *Swartzia*, to which in fact it is not closely related. The type material was in poor condition for study, consisting of foliage with fallen, old flowers. It seems to be somewhat characteristic of *Dussia* that the standard persists as the flowers wither, while the other petals fall, and on this account the flower of *Cashalia* was described falsely as possessing a single petal. Comparison of the type material with the excellent specimens of *Dussia grandifrons* made by Dr. Skutch leaves no doubt that the two names pertain to the same tree, for which the name *Dussia cuscatlanica* must be adopted. The genus *Cashalia* was accepted by Britton and Rose in their treatment of the Caesalpiniaceae in *North American Flora* (23: 348. 1930).

Dussia macroprophyllata (Donn. Smith) Harms, Repert. Sp. Nov. 24: 212. 1928. *Diplotropis macroprophyllata* Donn. Smith, Bot. Gaz. 56: 56. 1913. *Cashalia panamensis* Standl. Field Mus. Bot. 4:212. 1929.—The following material has been studied: Costa Rica: Forests of Las Vueltas, Tucurrique, alt. 635 meters, January, 1899, *Tonduz* 12949, type, in U. S. Nat. Herb.; a large tree with rounded crown.—Panama: Holstein Farm, region of Almirante, Prov. Bocas del Toro, in 1928, *G. Proctor Cooper* 520; type of *Cashalia panamensis;* local name Citrón; a tree 18 meters tall, the trunk 37 cm. in diameter, growing against the trunk of a huge guayacán; fruits red; bark has a red sap and is used as a purge; red skin of the fruit used as a febrifuge and sold in the local drug stores. It is not quite certain that *Cashalia panamensis* is synonymous with *Dussia macroprophyllata*, there being slight differences in pubescence of the leaves, but the general appearance of the specimens is so similar that we have little hesitation in making the present disposition of the Panama tree. The species is quite distinct from *D. cuscatlanica*, particularly in its large and broad leaflets, rounded or very obtuse at the apex, thick and somewhat rugose; and the inflorescences and flowers of the two species are very different.

Galactia minarum Standl. & Steyerm., sp. nov.—Herba gracilis, caulibus teretibus dense pilis patulis albidis pilosis, internodiis elongatis; folia majuscula petiolata trifoliolata membranacea, petiolo gracili 2–3.5 cm. longo dense breviterque piloso, stipellis subulatis brunneis 1 mm. longis, petiolulis crassiusculis ca. 3 mm. longis,

petiolulo terminali cum rhachi 6–10 mm. longo; foliola lanceolato-oblonga subaequalia, terminali paullo longiore, 4.5–9 cm. longa 1.7–3.5 cm. lata, acuminata vel longiacuminata, subulato-mucronata, basin versus paullo angustata, basi ipsa obtusa vel anguste rotundata, supra in sicco olivacea minute pallido-puncticulata praesertim ad costam nervosque breviter pilosa, glabrescentia, subtus pallidiora ubique dense pilis cinereis patulis vel subadpressis pilosa, costa tenera prominente, nervis lateralibus utroque latere ca. 9 subarcuatis obliquis angulo semirecto vel paullo latiore adscendentibus; racemi axillares simplices laxe multi- vel pauciflori 4.5 cm. longi vel breviores breviter pedunculati, rhachi densissime albido-pilosa, bracteis bracteolisque subulatis dense patulo-pilosis, pedicellis dense pilosis usque 3 mm. longis; calyx extus fere ubique dense albido-pilosus, lobis superioribus lineari-lanceolatis 6–7 mm. longis longiattenuatis, infimo paullo angustiore ca. 8 mm. longo; petala roseo-purpurea glabra, vexillo obovato apice rotundato et ciliato, ca. 12 mm. longo et 6 mm. lato; legumen juvenile late lineare ca. 1.5 cm. longum et 2.3 mm. latum dense patulo-pilosum acuminatum sessile, stylo glabro gracillimo 8 mm. longo.—Guatemala: Dept. Zacapa, steep, rocky slopes in pine forest, Sierra de las Minas, along trail between Río Hondo and summit of mountain at Finca Alejandria, alt. 1,000–1,500 meters, October 11, 1939, *Julian A. Steyermark* 29640 (type in Herb. Field Mus.).

Flowers rose-purple. Distinguishing characters of the plant are the long-acuminate, densely and softly pubescent leaflets, and the short, solitary racemes of rather large and showy flowers.

Pithecolobium Zollerianum Standl. & Steyerm., sp. nov. —Arbor 15-metralis, ramulis crassis subteretibus vel obtuse angulatis densissime pilis brevibus patulis brunneis obtectis et fere tomentulosis; stipulae parvae lineari-subulatae caducae; folia magna bipinnata 30–40 cm. longa breviter petiolata, petiolo crasso tereti dense fulvo-pilosulo paullo infra pinnas infimas glandulo parvo subdepresso onusto, rhachi 16–22 cm. longa infra nodos singulos glandulo parvo onusta; pinnae plerumque 8–13-jugae 6–16 cm. longae brevissime petiolatae, rhachi eglandulosa; foliola plerumque 8–18-juga membranacea sessilia oblonga 15–20 mm. longa 5–7 mm. lata, apice rotundata vel obtusissima, basi valde obliqua, latere exteriore angustata, interiore oblique truncata, supra laete viridia lucida tantum ad costam puberula, nervis venisque prominulis, subtus pallidiora flavescentia glabra, vel primo sparse adpresso-pilosula, costa prominula subcentrica, nervis prominulis; pedunculi axillares geminati

simplices 8–12.5 cm. longi nudi dense minute pilosuli; flores umbellati, umbellis capituliformibus dense multifloris, bracteis minutis vel obsoletis, pedicellis crassiusculis vix ultra 2 mm. longis minute sparseque puberulis; calyx anguste campanulatus 2.5 mm. longus sparse minutissime puberulus vel fere glaber, pallide viridis, dentibus remotis brevissimis triangularibus; corolla 6–7 mm. longa sparse minute puberula vel fere glabra profunde dentata, dentibus ovato-oblongis acutis erectis; stamina numerosa, filamentis viridi-albis 2.5 cm. longis vel ultra; legumen solemniter curvatum semicirculare vel circulare, valde compressum glabrum, valvis sublignosis sed tenuibus inter semina subconstrictis 1.5 cm. latis vel paullo ultra extus brunnescentibus; semina ut videtur exarillata compressa disciformia ovali-orbicularia brunnescenti-ochracea 8 mm. longa 7 mm. lata lucida laevia.—Guatemala: Dept. San Marcos: Above Finca El Porvenir, up Loma Bandera Shac, lower south-facing slopes of Volcán de Tajumulco, alt. 1,300–1,500 meters, March 9, 1940, *Julian A. Steyermark* 37440 (type in Herb. Field Mus.).—Dept. Quezaltenango: Damp forest, Finca Pireneos, below Santa María de Jesús, alt. 1,350 meters, March, 1939, *Standley* 68428 (sterile). Along Quebrada San Gerónimo, Finca Pireneos, alt. 1,300–2,000 meters, on slopes covered by tree ferns, *Steyermark* 33295; local name Plumillo.

A large tree; leaves rich, dark green above, paler grass-green beneath. In the treatment of the tribe *Ingeae* by Britton and Rose in *North American Flora* the key to their *Pithecolobium* segregates is vague and most unsatisfactory, and it is difficult to decide into which of their segregate genera the present species would fall. It seems to run in the key to their genus *Painteria*, but with that group of Mexican species it has no close relationship. The general appearance of *P. Zollerianum* suggests most the genus *Albizzia*, but in that the valves of the fruit are relatively very thin, and the Guatemalan tree can not be referred there. The species is named for Mr. Erich Zoller of Finca El Porvenir, who greatly facilitated the junior author's explorations of the Volcán de Tajumulco.

ERYTHROXYLACEAE

Erythroxylon Skutchii Standl., sp. nov.—Frutex gracilis 5-metralis glaber, ramulis crassiusculis ochraceis striatis, internodiis brevibus; stipulae deciduae insigniter elongatae usque 7 cm. longae lineares erectae brunneae striato-nerviae, longitudine valde variabiles, aliae 2.5 cm. tantum longae, apice filiformi-protractae; folia magna breviter petiolata firme coriacea, petiolo crasso 1.5–2 cm.

longo supra canaliculato; lamina lanceolato-oblonga vel anguste elliptico-oblonga 16–23 cm. longa 6–8 cm. lata acuta vel acuminata, basi acuta, supra in sicco fusca, costa nervisque subimpressis, venis non elevatis, subtus multo pallidior, costa crassiuscula prominente, nervis lateralibus utroque latere ca. 11 irregularibus valde prominentibus subarcuatis angulo latiusculo adscendentibus, remote a margine irregulare conjunctis, venis valde elevatis laxe areolato-reticulatis; flores axillares vel ad nodos defoliatos fasciculati dense congesti numerosi, pedicellis crassis angulatis 3–7 mm. longis inaequalibus, bracteis glumiformibus ovatis vel lanceolatis longiacuminatis 5–6 mm. longis striatis persistentibus; sepala ca. 4 mm. longa ovata acuminata.—Costa Rica: In forest, basin of El General, Prov. San José, alt. 1,000 meters, March, 1940, *Alexander F. Skutch* 4847 (type in Herb. Field Mus.).

From other large-leaved *Erythroxylon* species of Central America, the Costa Rican plant is distinguishable at once by the coarse and very prominent venation of the lower leaf surface.

TRIGONIACEAE

Trigonia floribunda Oerst. Vid. Medd. 1856: 38. 1856.—As at present understood, the species is a variable one, but chiefly in the quality and amount of pubescence. Since the pubescence varies greatly upon the same plant, the leaves being densely floccose-tomentose or glabrate sometimes upon the same branch, it is evident that pubescence alone can not be utilized in separating North American species, and it is probable that after all, the Central American plants must all be referred to a single species, with one possible exception. In *North American Flora* (25: 298. 1924) *T. floribunda* is reported as occurring from Salvador to Panama, but recent collections have extended its known range to Guatemala and Chiapas: Guatemala: Dept. Suchitepéquez: Damp thicket along Río Madre Vieja, above Patulul, alt. 450 meters, *Standley* 62202; a woody vine, sterile.—Dept. Chiquimula: Rocky outcrops along gorge of Río Chiquimula, between Santa Bárbara and Petapilla, 4–6 miles north of Chiquimula, alt. 350–420 meters, *Steyermark* 30244; shrubby, with twining tips. Grassy slope of Mount Tojás, near village of Sasmo, about one mile northwest of Chiquimula, alt. 420–520 meters, *Steyermark* 30199; leaves dark green above, white beneath.—Mexico: Mt. Madre Vieja, Chiapas, alt. 1,000 meters, *Matuda* 2517.

Trigonia panamensis Standl., sp. nov.—Ramuli graciles subteretes brunnei rimosi puberuli, internodiis brevibus; folia modica

petiolata membranacea, petiolo gracili 11–15 mm. longo dense incurvo-puberulo; lamina oblonga vel lanceolato-oblonga 8.5–11 cm. longa 3–4 cm. lata acuta vel subacuminata, apice ipso acuto, basi obtusa vel subacuta, supra fere glabra sed ad costam nervosque pilis paucis brevibus subadpressis conspersa, venis prominulis arcte reticulatis, subtus pallidior primo araneoso-tomentosa sed cito glabrata, costa tenera elevata, nervis lateralibus utroque latere ca. 8 teneris prominentibus arcuatis angulo latiusculo adscendentibus, venis prominentibus arcte reticulatis; panicula terminalis magna sessilis pyramidalis laxe ramosa ca. 24 cm. longa et aequilata simpliciter pinnata, ramis gracilibus patentibus dense puberulis, floribus in cymulas parvas paucifloras dispositis, cymulis racemosis breviter vel longius pedunculatis, pedunculis usque 6 mm. longis rectangule patulis, bracteis persistentibus lanceolato-ovatis sparse minuteque puberulis vix ad 2 mm. longis, pedicellis plerumque 2–3 mm. longis; sepala ca. 3 mm. longa extus dense minute griseo-tomentella intus glabra paullo inaequalia lanceolato-oblonga obtusa vel subacuta; ovarium dense pilosum.—Panama: Barro Colorado Island, Fairchild Point, Canal Zone, July 14, 1934, *Silvestre Aviles* 961 (type in Herb. Field Mus.). Barro Colorado Island, in 1929, *S. W. Frost* 175 (sterile, but doubtless referable here).

Trigonia floribunda Oerst., the common species of Central America, with which this Panama species has been confused heretofore, differs in its condensed inflorescence of decidedly different appearance, with sessile or subsessile cymules and very shortly pedicellate flowers.

EUPHORBIACEAE

Phyllanthus Skutchii Standl., sp. nov.—Arbor 25-metralis fere omnino glabra, ramulis gracilibus teretibus ochraceo-brunnescentibus substriatis glabris, internodiis plerumque 1–2 cm. longis; stipulae subpersistentes anguste triangulares rigidae acutae vel subacuminatae 1.5 mm. longae erectae; folia modica breviter petiolata firme membranacea alterna, petiolo crassiusculo ca. 4 mm. longo glabro; lamina lanceolato-oblonga usque ovato-oblonga vel ovata 6–9.5 cm. longa 2.5–3.5 cm. lata sensim vel subabrupte acuminata vel longiacuminata, acumine angusto sensim attenuato saepe subfalcato, basi obtusa, supra in sicco viridescens sublucida, costa subimpressa, nervis venisque prominulis, glabra, subtus pallidior saltem in statu adulto fere omnino glabra sed ad nervos prope basin laminae pilis paucis brevissimis conspersa, costa tenera prominente, nervis lateralibus utroque latere ca. 7 tenerrimis prominentibus arcuatis

angulo lato adscendentibus juxta marginem arcuato-junctis, venulis prominentibus arcte reticulatis; flores monoeci in axillis dense fasciculati, masculi numerosi, feminei pauci vel in quaque axilla uno, masculi sessiles vel breviter pedicellati, pedicellis florum femineorum filiformibus magis elongatis in statu fructifero 5–6 mm. longis glabris; sepala floris masculi late ovalia apice obtusa vel rotundata glabra paullo inaequalia vix ad 1 mm. longa, flore ca. 1.2 mm. lato; sepala floris feminei 6 glabra in statu fructifero ca. 3 mm. longa anguste oblonga usque spathulato-obovata obtusa viridia uninervia; capsula subglobosa ca. 8 mm. alta et 9 mm. lata sessilis basi rotundata, apice subumbonata, glabra, fere teres.—Costa Rica: Vicinity of El General, Prov. San José, alt. 670 meters, June, 1939, *Alexander F. Skutch* 4325 (type in Herb. Field Mus.); flowers white.

In general characters and appearance the species has no close resemblance to any other known from Central America. It is especially remarkable for the large size of the plant, trees being rare in the genus, particularly ones attaining a height of 25 meters.

Sebastiania longicuspis Standl. Field Mus. Bot. 11: 134. 1932.—The tree has been reported from various localities in British Honduras, whence the species was described, as well as from Petén and Alta Verapaz, Guatemala. Two recent collections from Guatemala are worthy of record: Dept. Izabal; Bank of Río Dulce, *C. L. Wilson* 408; a low tree. Bay of Santo Tomás, between Escoba and Santo Tomás, at sea level, *Steyermark* 39234; a tree; leaves subcoriaceous, dark green above, pale green beneath; flowers greenish.

CELASTRACEAE

Euonymus acuminatus Benth. Pl. Hartw. 59. 1840.—Plants of the genus *Euonymus* seem to be very rare in Mexico and Central America, or else they have escaped collectors, for but few specimens accumulate in herbaria. *E. acuminatus* was described from Llano Verde, Mexico, and appears to be represented by the following Guatemalan collections: Chichavac, Dept. Chimaltenango, October, 1933, *Skutch* 627; a rare shrub in deep, shady ravine, below 2,700 meters; aril red. Dept. Guatemala, in 1940, *Ignacio Aguilar* 434.

SAPINDACEAE

Serjania pterarthra Standl. Carnegie Inst. Wash. Publ. 461: 70. 1935.—Described from Tuxpeña, Campeche, Mexico, and reported also from Little Fall, Belize River, British Honduras. Two other collections may be recorded for this unusually well marked

species: Guatemala: El Paso, Petén, a frequent vine, *Lundell* 1531.—Mexico: Mercedes, Balancán, Tabasco, *Matuda* 3017.

TILIACEAE

Mortoniodendron guatemalense Standl. & Steyerm. Bot. Ser. Field Mus. 22: 157. 1940.—This species was originally described from flowering material only. Recent collections made in Guatemala (*Steyermark* 39395 and 39414) in the fruiting stage of the plant show that the fruit is 3-celled, obtusely angled, dull green, apiculate, loculicidally dehiscent, 2–2.2 cm. long, 1.5–1.8 cm. broad, the exocarp dull green, the endocarp creamy buff, 1 mm. in thickness, the locules each 2-seeded, the seeds not completely filling the locule, loosely covered by a fleshy, deep orange aril attached to the hilum and raphe, ovoid, plano-convex, slightly umbonate and rounded at one end, pointed at the other, 7–8 mm. long, 5–6 mm. broad in the widest portion, the testa brown, thinly crustaceous, glabrous, smooth, the endosperm copious, completely filling the seed, cream-colored. The fruit is much smaller than that of *Mortoniodendron anisophyllum* (Standl.) Standl. & Steyerm. Additional collections of *Mortoniodendron guatemalense* from Guatemala are as follows: Dept. Izabal: Río Dulce, between Livingston and 6 miles up river, on north side (right-hand side going up river), at sea level, April 14, 1940, *Steyermark* 39414; same locality and date, *Steyermark* 39395 and 39386a; a tree 6 meters tall. In wet forest, Escoba, across the bay (west) from Puerto Barrios, near sea level, May 3, 1939, *Standley* 72874.

COCHLOSPERMACEAE

Amoreuxia palmatifida Sessé & Moc. ex DC. Prodr. 2: 638. 1825.—The plant has a wide but somewhat erratic range, extending in Mexico from Sonora southeastward to Yucatán, although there are many intervening areas, of course, in which it does not grow. Its occurrence in Yucatán, near Izamal, is scarcely to be expected, but it is perhaps less remarkable in view of the fact that the plant has been collected recently in the dry Motagua Valley of Guatemala, this being its first record for Central America: Dept. Zacapa, desert near Estanzuela, alt. 200 meters, in flower and fruit, October 5, 1939, *Steyermark* 29094; flowers orange. It is to be noted that De Candolle in describing the genus *Amoreuxia* (loc. cit.) gave no author for either the genus or species, merely citing "fl. mex. ic. ined.," which would be presumed to be that of Sessé and Mociño. A photograph of the plate of these authors, upon which the descriptions of genus and species were based, is in the Herbarium of Field Museum.

VIOLACEAE

Rinorea Blakeana Standl., sp. nov.—Frutex 2–3-metralis, ramis gracilibus teretibus ochraceis longitrorsum rugosis vel rimosis glabris, internodiis plerumque brevibus; folia alterna modica breviter petiolata membranacea, petiolo gracili glabro usque 5 mm. longo; lamina anguste lanceolato-oblongo 7–11 cm. longa 2–3 cm. lata longissime et angustissime caudato-acuminata, acumine longo ipso obtuso, basi obtusa, utrinque glabra, supra in sicco intense viridis, costa nervisque prominulis, venis prominulis laxe reticulatis, subtus pallidior, costa tenera prominente, nervis lateralibus utroque latere ca. 8–9 prominentibus angulo lato adscendentibus subarcuatis, venulis prominulis laxe reticulatis, margine integro vel obscure undulato; inflorescentiae parvae pauciflorae axillares, pedunculis vix ultra 3 mm. longis, floribus ad apicem fasciculato-umbellatis, vulgo ca. 3, pedicellis ca. 4 mm. longis minute puberulis; sepala inaequalia orbicularia usque rotundo-ovata 1.2–1.8 mm. longa apice rotundata dorso fere glabra ciliolata; corolla in alabastro ovoidea acutiuscula glabra, petalis ca. 5 mm. longis apice breviter recurvis.—Panama: Cana–Cuasi trail, Camp 2, Chepigana District, Prov. Darién, 600 meters, March 12, 1940, *M. E. & R. A. Terry* 1513 (type in Herb. Field Mus.).

The only other Central American species with alternate leaves is *Rinorea crenata* Blake, of Talamanca, Costa Rica. That has a paniculate inflorescence and much broader leaves that are minutely hirtellous beneath along the costa. The species is named for Dr. S. F. Blake, monographer of the American species of the genus.

FLACOURTIACEAE

Olmediella Betschleriana (Goepp.) Loes. Notizbl. Bot. Gart. Berlin 4: 181. 1906. *Ilex Betschleriana* Goepp. Del. Sem. Vratisb. 1852; Linnaea 26: 745. 1853–54. *Olmediella ilicifolia* Baill. Bull. Soc. Linn. Par. 1: 253. 1880. *O. Cesatiana* Baill. loc. cit. *Licopolia sincephala* Rippa, Bull. Orto Bot. Napoli 2: 74. 1904.—The tree to which this name applies has had a most varied history. It has been in cultivation in Europe, particularly in Italy, for more than 80 years, having been introduced doubtless on account of its holly-like foliage. There, apparently, it seldom flowers or fruits, and with only the foliage available, botanists who saw the plants had great difficulty in determining their proper relationship, and referred them to such genera as *Quercus* and *Sapium*, or most often to *Ilex*, because of the spiny-dentate leaves. The name *Olmediella* was given the genus

because it was believed to belong to the family Moraceae. The early history was brought together by Loesener (loc. cit.), who gave a most satisfactory account also of the true relationship of the genus. It, strangely enough, is apparently most closely related to the African genus *Doryalis* of the Flacourtiaceae.

The source of the European plants remained unknown for many years, and it was not until 1932 that the senior author was able to report definitely (Trop. Woods 32: 17) that *Olmediella* was a native of the Guatemalan mountains. Its nativity there is now well established, and the tree has been found to grow also in Honduras and the State of Chiapas, Mexico. All the specimens now available to the writers are cited below.

Guatemala: Dept. Guatemala: La Cienaguilla, San José Pinula, alt. 1,600 meters, in 1932, *J. G. Salas*. Amatitlán, alt. 1,100 meters, January, 1928, *Morales Ruano* 830. Guatemala City, cultivated, June, 1932, *Salas*. Volcán de Pacaya, damp forest, alt. 1,800–2,400 meters, *Standley* 58477; a large tree, common; local names Manzana and Manzanote; fruit green.—Dept. Jalapa: Cloud forest on top of ridge, between Miramundo and summit of Montaña Miramundo, alt. 2,500 meters, *Steyermark* 32688; local name Manzanote; a tree of 11 meters; leaves coriaceous, dark, dull green above, paler beneath.—Dept. Sacatepéquez: Parque Central de Antigua, October, 1929, *Salas* 1385. Damp forest, hills of Finca Carmona, southeast of Antigua, alt. 1,600–1,800 meters, *Standley* 63672; a large or small tree in damp forest, common.—Dept. Chimaltenango: Slopes of Volcán de Acatenango, above Las Calderas, in dense, wet *Chiranthodendron* forest, alt. 2,400–2,700 meters, *Standley* 61968; a small tree.—Dept. Quezaltenango: Western slopes of Volcán de Zunil, opposite Santa María de Jesús, alt. 1,500 meters, *Steyermark* 35093; a shrub.—Dept. San Marcos: Wet forest, Barranco Eminencia, above San Rafael Pie de la Cuesta, alt. 2,100–2,400 meters, *Standley* 68685; a small tree with very lustrous leaves. Top of dry barranco slopes, between town of Tajumulco and Tecutla, northwestern slopes of Volcán de Tajumulco, alt. 1,800–2,500 meters, *Steyermark* 36846; a tree of 12 meters.—Mexico: Pinada, Siltepec, Chiapas, *Matuda* 1988.—Honduras: Dept. Tegucigalpa: Montaña de la Flor, alt. 1,440 meters, in pine and oak region, *Christine & Wolfgang von Hagen* 1247; a spreading tree of 9 meters; local name Cumbo de cerro.—Dept. Siguatepeque: Ravine at El Achote, above the plains of Siguatepeque, alt. 1,350 meters, *Yuncker, Dawson & Youse* 6227; a tree of 3.5 meters. Thickets west of El Achote, No. 6200 of the

same collectors. Siguatepeque, alt. 1,110 meters, open, mountain forest, *J. B. Edwards* P492; a tree of 15 meters.—Cultivated in Europe: Cult. in hort. Neapolitano, May, 1905, *Delpino & Rippa* (received from Dr. Loesener).

It should be mentioned that the first material that permitted definite reference of the tree to its native region was that forwarded by Sr. Jorge García Salas, then of the Dirección de Agricultura of Guatemala. To a Guatemalan so many words about the Manzanote tree, as it is commonly known, would seem rather amusing, for Manzanote is one of the commonest street and park trees of Antigua and Guatemala, and few residents of those cities pass the day without seeing a few or many of the trees. They grow luxuriantly in the Parque Central of Antigua, in front of the old Palace of the Viceroys of Guatemala, as well as in many of the parks of Guatemala and other upland cities. In the capital there are many handsome avenues of the trees, the finest being that along the Paseo de la Reforma, principal boulevard of Guatemala.

The tree is a particularly effective one for street and park planting, and would be desirable for any cool but not too cold region in which it would grow. It is probable that it would thrive, for instance, about San Francisco, California. Even from a considerable distance the cultivated trees are easy to recognize because of their low, rounded crowns of remarkably dense, dark green foliage, which reminds one strongly because of both its color and the stiff, spiny-margined leaves, of the Christmas hollies. Part of the denseness of the crowns may result from pruning or clipping, but this is not certain. In the dense, moist forests where the trees grow naturally, they are quite different, with tall trunks and rather open, irregularly branched crowns, but that, of course, is the natural effect of deep shade. The leaves are decidedly variable in the species, most of them being deeply sinuate-dentate, each tooth tipped with a stout, sharp spine, but on the ultimate branches of mature trees the leaves often are quite entire.

TURNERACEAE

NOTES ON THE AMERICAN SPECIES OF ERBLICHIA

Erblichia odorata Seem. (Bot. Voy. Herald 130. *pl. 27.* 1854), originally described from "Paredez Islands, coast of southern Veraguas," Panama, has been a catch-all for the Mexican and Central American specimens of the genus that have gradually accumulated in American herbaria. As a result of our study of material of this

genus preserved in the Herbarium of Field Museum and that in the United States National Herbarium, lent through the courtesy of its curator, Dr. William R. Maxon, it has been found that the species described as *E. odorata* Seem. is a rare and local one restricted to Panama and Costa Rica, while the more commonly collected and more widely ranging plants of Mexico south to Honduras may be referred to two other species and one variety, namely, *E. Standleyi* Steyermark, and *E. xylocarpa* (Sprague & Riley) Standl. & Steyerm. and *E. xylocarpa* var. *mollis* Standl. & Steyerm.

All the American representatives of the genus *Erblichia* are forest trees of great size with strikingly beautiful, large flowers. Indeed, they easily rank among the showiest trees found in the Mexican and Central American tropics. When *E. odorata* was first published the flowers were described by Seemann as yellow, "flavis." Subsequently, the plants from Costa Rica, which belong to the same species, have been noted by collectors, including Standley, also as "bright yellow," and Standley in the *Flora of Costa Rica* records the color of the petals of this species as "yellow." Collectors who have noted the color of the flowers of *Erblichia* in other parts of Central America and Mexico have described the color as orange or reddish orange. The junior author has seen the trees in several parts of Guatemala, where in all instances the petals were of a brilliant flame-color of bright, deep orange, reddish orange, or reddish salmon; never was there any suggestion in these trees of yellow, such as has been recorded for the true *E. odorata* of Panama and Costa Rica.

The various entities which the present study has revealed may be keyed as follows:

Ovary glabrous; young branches from the beginning entirely glabrous. *E. Standleyi.*

Ovary velutinous; young branches from the beginning velutinous.

Lower leaf surface loosely and densely velutinous. 2a. *E. xylocarpa* var. *mollis.*

Lower leaf surface glabrous or sparsely appressed-pubescent with scattered hairs.

Petals yellow; style spreading-villous at the base; plants of Panama and Costa Rica..... *E. odorata.*

Petals red-orange; style glabrous at the base; plants of Honduras north to southern Mexico. . 2. *E. xylocarpa* var. *typica.*

Erblichia odorata Seem. Bot. Voy. Herald 130. *pl. 27.* 1854; Standley, Bot. Ser. Field Mus. 18: 726. 1937. *Piriqueta odorata*

Urban, Jahrb. Bot. Gart. Berlin 2: 80. 1883.—In addition to the original collection cited by Seemann, "on the outskirts of woods, Paredez Islands, coast of southern Veraguas," Panama, the following Costa Rican collections are at hand: Guanacaste, scarce, dry forest, tree of 17 meters with narrow, thin crown, flowers bright yellow, vicinity of Tilarán, alt. 500–650 meters, January, 1926, *Standley & Valerio* 45718; a tree 7.5 meters tall, with small, narrow crown, petals bright yellow, sepals green; January, 1926 *Standley* 46347. Finca Colombia, San Ramón, February, 1940, *Manuel Quirós C.* 927; a small tree with golden yellow flowers.

Erblichia xylocarpa (Sprague & Riley) Standl. & Steyerm., comb. nov. *Piriqueta xylocarpa* Sprague & Riley, Kew Bull. 1923: 373. 1923. *Erblichia odorata* acc. to Standley, Contr. U. S. Nat. Herb. 23: 847. 1923, as to reference of plants of Mexican distribution, not as to description.—This is the more commonly collected and widely distributed plant that has passed as *E. odorata* Seem. In view of the fact that *Piriqueta xylocarpa* was originally described from a fruiting specimen collected in British Honduras (*Campbell* 33), and since flowering material of the species has subsequently accumulated, it seems advisable to append a description of the flowers, which heretofore has not been published.

Sepals lanceolate or linear-lanceolate, 5–6.5 cm. long, 0.6–1 cm. broad, long-acuminate or caudate, some of them yellow-green on the outside, others pale green with a broad, green midrib or central portion and salmon or pale orange margins, appressed-puberulous on the outside mainly down the middle and at the base of the lobes; petals bright orange, tango-orange, or orange-salmon, cuneate-rhombic-obovate, cuspidate or abruptly caudate at the apex, conspicuously narrowed in the lower third, 6–8 cm. long, 3.5–4.5 cm. broad in the upper or broader half, finely canescent-puberulent at the extreme base, within for 9 mm. upward, without for 5–6 mm. upward; filaments dilated in the lower half, orange or orange-salmon, 4.5 cm. long, 2 mm. broad in the lower half, densely villosulous in the lower half, glabrous in the upper half; anthers versatile, linear-oblong, ochraceous, 4–6 mm. long, 1–1.3 mm. broad, appendiculate at the tip with a process 0.7 mm. long; stigma capitate, fimbriate; styles orange or orange-salmon, 4.5–5 cm. long, entirely glabrous or with a few sparse, appressed hairs at the very base; ovary usually densely velutinous with short, ascending, stiff, yellow-brown hairs.

The following specimens have been examined: Mexico: Nayarit: "Suelda con suelda," Cerro de la Gloria, alt. 400 meters, in 1923,

J. G. Ortega 47.—Guatemala: Dept. Petén: San Diego, Río Pasión, April, 1935, *Mercedes Aguilar* 500.—Dept. Alta Verapaz: "Canop," a tree 22 meters tall, forested hillsides, Chamá, alt. 900 meters, March, 1920, *Harry Johnson* 1861. "Conop," Río Canguinic, alt. 320 meters, March, 1902, *Tuerckheim* 8182.—Dept. Izabal: "Candelaria," a tree of 18–21 meters, leaves firmly membranaceous, dark, rich green above, paler grass-green beneath, low forest slopes, between Bananera and La Presa, in Montaña del Mico, alt. 40–300 meters, March, 1940, *Steyermark* 38294.—British Honduras: Camp 32, British Honduras-Guatemala Boundary, a forest tree 18 meters tall, flowers tango-orange, April, 1934, *Schipp* S718. Medium-sized tree on Columbia River, in high ridge, April, 1933, *M. O. Hope* 18. Small to medium tree, occurring rarely up Columbia Valley, March, 1929, *M. A. Balderamos.*—Salvador: Ahuachapán, "Flor de fuego," in 1924, *Sisto Alberto Padilla.*

Erblichia xylocarpa is rather variable in the amount of pubescence of the young branches, petioles, peduncles, and under surface of the leaves. *Campbell* 33, type of Sprague and Riley's *Piriqueta xylocarpa*, is a glabrate extreme of this species. Its branches are described as "glabri vel glabriusculi, fusco-cinerei," leaves "glabra," petioles "glabri," peduncles "glabriusculi," stipules (bracts) "superne subappresse fulvo-pilosae," and capsule "juventute minute puberula, demum glabra." Unfortunately, since the plant was described from a fruiting specimen, nothing is known of the flowers and, therefore, the glabrousness of the plant has been emphasized in the description, since mature specimens show a proportionate decrease of pubescence. Some of the above specimens cited, namely *Hope* 18, *Ortega* 47, and *Steyermark* 38294, somewhat approach the more nearly glabrate types. The petioles vary from densely fulvous-puberulent to glabrate with a few sparse, appressed hairs in the plant collected by Hope. The same type of variation is found on the young branches and lower surface of the blades. In the latter the midrib usually has sparse, appressed hairs, but in age these may disappear almost entirely; moreover, the lower surface of the blade is usually glabrous, but may have a few appressed ones scattered over its surface. Sprague and Riley stated that their species differed from *Erblichia odorata* in having longer, slender petioles, proportionately narrower blades narrowed at the base, with inconspicuously, if at all, crenate margins, and curved seeds. So far as the supposed vegetative differences mentioned above are concerned, these are unimportant and not at all diagnostic characters, since the specimens we have examined

how variation in the length of the petioles and in the proportionate ize of the blades. Moreover, the margins of the blade are usually nconspicuously crenate, as in the Steyermark and Schipp specimens, ut may be more prominently crenate, as shown by the Padilla pecimen.

In the western part of the range of *E. xylocarpa* a very pubescent xtreme, common in southwestern Guatemala and southern Mexico, s found. It may be described as:

Erblichia xylocarpa var. **mollis** Standl. & Steyerm., var. nov.—A typo recedit ramulis juvenilibus, petiolis pedunculisque dense fulvo-velutinis; laminis subtus dense fulvo-velutinis praesertim ad costam mediam laminae supra fulvo-velutinis, aliter plerumque glabris, marginibus vulgo prominenter mucronato-crenatis; sepalis extus fulvo-tomentosis; petalis flammeo-aurantiacis 5.5–8.5 cm. longis, 3.5–4.5 cm. latis, cuneato-rhomboideo-obovatis; filamentis inferne villosulis; stylis prope basin hirsutulis; ovario dense fulvo-tomentoso.—Mexico: Chiapas: Mt. Ovando, February, 1939, *Matuda* 2653. Volcán de Tacaná, Finca La Unión, March, 1939 *Matuda* 2789. Near Chicharras, alt. 2,000 meters, February, 1896, *E. W. Nelson* 3803.—Oaxaca: "Jarro de Oro, Azuche," Cafetal San Rafael, alt. 800 meters, December, 1917, *B. P. Reko* 3702. A tree of 30 meters, Cerro San Rafael, alt. 800 meters, August, 1926, *E. Makrinius* 643.—Guatemala: Dept. Sololá: A forest tree of 18 meters, Volcán de Atitlán, alt. 1,333–1,666 meters, February, 1939, *F. W. Owen Smith.*—Dept. Quezaltenango: "Candelaria de montaña," a tree of 12–15 meters, petals bright orange, leaves firmly chartaceous, rich, dark grass-green above, pale green beneath, ridge top along Quebrada San Gerónimo, Finca Pireneos, lower, south-facing slopes of Volcán de Santa María, between Santa María de Jesús and Calahuaché, alt. 1,300–2,000 meters, January, 1940, *Steyermark* 33448 (type in Herb. Field Mus.). Also observed by the junior author in Guatemala on Volcán de Zunil, Volcán de Tajumulco, and Volcán de Tacaná.

The dense, tawny or tan-colored pubescence is characteristic of this variety and is especially well developed on the young branchlets, peduncles, petioles, lower surface and midrib of the leaves and bracts, and on the outer surface of the sepals. The upper surface of the blade is glabrous or has a few scattered hairs; the midrib on the upper surface is usually tawny-velutinous, at least in the lower third or fourth. The leaves vary in size and shape, but are mostly elliptic-oblong to lance-elliptic, 7.5–15 cm. long, 2.3–4.6 cm. broad, acute

to acuminate, and usually conspicuously crenate. The crenations are usually mucronate-tipped. The petioles are 6–11 mm. long. The flowers are very fragrant, suggesting the odor of some orchids. The sepals are usually much hairier on the outer surface than those of typical *E. xylocarpa*, orange within, and green without in the center, with orange margins. The petals are of a bright flame-orange, while the filaments and stigmas are orange. The anthers are green; the ovary is green and covered with dense, tawny hairs. The styles are orange and at the base are usually covered with dense hairs, while in typical *E. xylocarpa* the styles are usually glabrous at the base.

The plant with all its vegetative and floral parts glabrous or practically so may be called:

Erblichia Standleyi Steyermark, sp. nov.—Arbor 7–27 m. alta; ramis juvenilibus glabris; foliis elliptico-oblongis, apice acutis vel acuminatis, in basin sensim attenuatis, chartaceis vel tenuiter subcoriaceis, utrinque ut etiam petiolis et costa media glabris, utroque latere 6–8-nerviis, petiolis 6–14 mm. longis, laminis 5–11.5 cm. longis, 2–3.7 cm. latis, marginibus late crenatis; bracteis glabris vel minute sparseque adpresso-pilosulis: pedunculis glabris; sepalis extus glabris vel minute sparse adpresso-pilosulis, 4.5–5 cm. longis, 0.9–1 cm. latis, lanceolatis vel lineari-lanceolatis, acuminatis; petalis flammeo-aurantiacis praeter basin intus tomentosam glabris, cuneato-rhomboideo-obovatis, apice cuspidatis, 6.5–7 cm. longis, ca. 4.5 cm. latis; filamentis utrinque basi dense puberulis, 4.3–4.5 cm. longis; antheris 4.5–5 mm. longis; stylis omnino glabris, 3.5–3.7 cm. longis; ovario omnino glabro; fructu juvenili glabro.—Mexico: Tabasco: "San Pedro," a tree 27 meters high, 70 cm. in diam., La Palma, Balancán, June 1–6, 1939, *E. Matuda* 3319.—Oaxaca: "Chamiso," a tree 22 meters tall, flowers pale reddish pink, in flood-free forest, alt. 30–90 meters, June, 1937, *Llewelyn Williams* 9460.—Honduras: Dept. Atlántida: A tree about 7 meters tall, flowers reddish orange, open forest along banks of Salado River, above the village of Salado, vicinity of La Ceiba, July, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8323 (type in Herb. Field Mus.).

The styles entirely glabrous at their base, ovary and young fruit entirely glabrous from the beginning, and glabrous or practically glabrous sepals, leaves, petioles, peduncles, and young branchlets, all combine to distinguish this species from the other species and varieties described above. The lower surface of the bracts and outer surface of the sepals may have a few scattered, appressed hairs, but in the main are essentially glabrous. In general characters this

pecies appears to be near the glabrate extremes of *E. xylocarpa*, but he specimens of the latter species which have been examined from 3ritish Honduras show densely fulvous-tomentose ovaries, young)ranches, and peduncles. While I have not examined the type *Campbell* 33) of *Piriqueta xylocarpa* Sprague & Riley from British Honduras, all the specimens seen from that country possess a densely ulvous-tomentose ovary and young branchlets and peduncles, and t is assumed, therefore, that the Campbell specimen from British Honduras likewise would possess these characteristics. Sprague ınd Riley describe the capsule of the Campbell specimen as "juven- ;ute minute puberula," which leads to the assumption that the ovary was in the beginning covered with a denser coat of tomentum, as is characteristic of all the other British Honduras specimens that have been examined.

MYRTACEAE

Calyptranthes pendula Berg, Linnaea 27: 21. 1854.—At present the Mexican and Central American species of *Calyptranthes* are poorly understood, principally because of lack of ample herbarium material, and at best the differences between most of the species, as in so many of the Myrtaceae generally, are poorly marked. A single Guatemalan collection of the genus seems referable to *C. pendula* which was described from the mountains of Oaxaca, Mexico, and has been reported to range northward to Sinaloa. Guatemala: Dept. San Marcos, above Finca El Porvenir, south-facing slopes of Volcán de Tajumulco, alt. 1,400–1,700 meters, *Steyermark* 37253; a shrub of 4.5 meters; leaves chartaceous, rich green above, pale green beneath; flowers rose-purplish, with green calyces.

Eugenia cacuminum Standl. & Steyerm., sp. nov.—Frutex 3-metralis fere omnino glaber ut videtur dense ramosus, ramulis crassiusculis subteretibus ferrugineis vel brunneo-ochraceis, internodiis brevibus, novellis sparse minutissime puberulis vel fere glabris; folia parva breviter petiolata firme coriacea, petiolo crassiusculo 5–9 mm. longo glabro supra canaliculato; lamina glabra elliptico-oblonga vel lanceolato-oblonga prope medium latissima 4–7 cm. longa 1.5–2.3 cm. lata apicem angustum obtusum versus paullo angustata, basi obtusa vel acutiuscula, supra lucidissima viridis, costa venisque vix elevatis, subtus pallidior sat dense pellucido-punctata, costa tenera prominente, nervis lateralibus obscuris rectis irregularibus vix prominulis angulo latiusculo abeuntibus prope marginem irregulare junctis; flores axillares ut videtur (in statu fructifero tantum visi) solitarii vel fasciculati sessiles vel subsessiles; fructus globosus 7–8 mm. diam.

glaber in sicco profunde longitrorsum sulcatus lucidus; calyx ad apicem fructus persistens glaber, sepalis 4 rotundatis viridescentibus ciliolatis ca. 4 mm. longis incurvis et concavis.—Guatemala: Dept. Chiquimula: On ridge, Montaña Nube (Montaña Volcancitos), between Socorro Mountain and Cerro Brujo, southeast of Concepción de las Minas, alt. 1,500–1,700 meters, October 31, 1939, *Julian A. Steyermark* 30903 (type in Herb. Field Mus.); leaves firmly membranaceous when fresh, dark green above, pale beneath.

Well marked by the small, very lustrous and discolorous leaves, and especially by the sessile or nearly sessile fruits which in the dry state are deeply sulcate vertically.

Eugenia chiquimulana Standl. & Steyerm., sp. nov.—Arbor 6-metralis, ramulis vetustioribus cinereis rimosis, junioribus canobrunnescentibus ad nodos in sicco aliquanto compressis et sparse minute puberulis, internodiis elongatis; folia majuscula petiolata coriacea, petiolo 9–13 mm. longo crasso minute cinereo-tomentello vel glabrato; lamina oblonga vel elliptico-oblonga 9–10.5 cm. longa 4–4.5 cm. lata, obtusa vel subacuta, apice ipso obtuso, basi acutiuscula vel obtusa, in statu adulto glaberrima, supra in sicco lucida brunnescens, costa anguste subimpressa, nervis prominulis, subtus pallidior brunnescens sublucida dense minute punctata, costa tenera elevata, nervis lateralibus utroque latere ca. 12 tenerrimis fere rectis angulo lato adscendentibus prope marginem in nervum distinctum collectivum irregularem conjunctis, venis prominulis sed inconspicuis laxe reticulatis; fructus magnus subglobosus 2–2.5 cm. diam. basi et apice rotundatus, tomento molli densissimo brunneo obtectus; sepala ad apicem fructus persistentia 4 rotundo-ovata obtusissima ca. 5 mm. longa extus brunneo-tomentella vel glabrata.—Guatemala: Dept. Chiquimula, cloud forest near the summit of Volcán de Quezaltepeque, 3–4 miles northeast of Quezaltepeque, alt. 2,000 meters, November 8, 1939, *Julian A. Steyermark* 31453 (type in Herb. Field Mus.).

Leaves coriaceous, grass-green above, silvery green beneath; fruit covered with dull brown hairs. The fruits are separated from the branches, and the form of the inflorescence can not be determined satisfactorily. The species is similar to some of those described from Honduras, but does not agree in essential details with any one of them. The very large, densely tomentose fruits and the large, lustrous leaves are conspicuous characters.

Eugenia musarum Standl. & Steyerm., sp. nov.—Frutex 2.5 m. altus omnino glaber, ramis gracilibus ferrugineis, acute vel obtuse

tetragonis ad nodos incrassatis, internodiis elongatis; folia magna breviter petiolata crasse membranacea, petiolo crasso 4–6 mm. longo supra late canaliculato; lamina anguste oblonga vel lanceolato-oblonga medio latissima 15–20 cm. longa 4.5–6.5 cm. lata sensim vel subabrupte longiacuminata, acumine angusto subobtuso, basi obtusissima vel anguste rotundata, supra in sicco griseo-viridis, costa anguste subimpressa, nervis venisque non elevatis inconspicuis, subtus pallidior, costa tenera prominente, nervis lateralibus utroque latere ca. 15 tenerrimis prominentibus angulo semirecto vel saepius latiore adscendentibus remote a margine in nervum collectivum tenuem irregularem conjunctis, venis fere obsoletis; flores ad nodos defoliatos fasciculati pauci subsessiles; hypanthium late hemisphaericum punctatum ca. 3 mm. altum basi late rotundatum; sepala 3–3.5 mm. longa rotundo-ovata apice rotundata ciliolata remote punctata pallida; petala obovato-orbicularia 6 mm. longa et fere aequilata; stamina numerosissima; stylus gracillimus glaber fere 10 mm. longus. —Guatemala: Dept. Izabal: Río Juyamá, southeast of Cheyenne, about 15 miles southwest of Bananera, alt. 50–100 meters, April 8, 1940, *Julian A. Steyermark* 39165 (type in Herb. Field Mus.).

Leaves when fresh firmly membranaceous, rich, dull green above, pale green beneath; calyx lobes spreading, greenish white; petals white. The most closely related species of Central America is *Eugenia lancetillae* Standl., which has somewhat pubescent leaves, with more prominent and differently disposed venation, and acute or narrowly obtuse at the base.

Eugenia simiarum Standl. & Steyerm., sp. nov.— Arbor omnino glabra, ramis gracilibus rectis rigidis brunneis ad nodos paullo incrassatis, internodiis brevibus vel elongatis; folia inter majora breviter petiolata subcoriacea, petiolo crasso 7–9 mm. longo; lamina anguste oblongo-lanceolata prope vel paullo infra medium latissima 16–19 cm. longa 4.5–5.5 cm. lata apicem versus longe sensim angustata, apice ipso angusto obtuso, basi acuta, supra in sicco griseo-viridis opaca, costa nervisque prominulis, venis quoque prominulis laxe reticulatis, subtus pallidior, costa tenera elevata, nervis lateralibus utroque latere ca. 15 teneris prominentibus angulo lato divergentibus fere rectis remote a margine in nervum collectivum crenatum junctis, venulis inconspicuis vix prominulis laxe reticulatis; flores in axillis foliorum vel ad nodos defoliatos fasciculati pauci vel numerosi, pedicellis 8–14 mm. longis plerumque rectis gracilibus; hypanthium 2.5 mm. longum dense grosse glanduloso-punctatum; sepala semiorbicularia vel rotundo-ovata 1.5–2 mm. longa apice

late rotundata sparse ciliolata dense punctata; petala alba grosse glanduloso-punctata ca. 5 mm. longa; bracteolae 1–1.5 mm. longae basi hypanthii insertae ovatae vel lanceolatae obtusae vel acutae.—Guatemala: Dept. Izabal: Between Bananera and La Presa, in Montaña del Mico, alt. 40–300 meters, March 28, 1940, *Julian A. Steyermark* 38274.

Leaves when fresh firmly chartaceous, rich green above, pale green beneath; pedicels light green; petals white; calyx lobes pale green. *Eugenia simiarum* is similar to *E. lancetillae* Standl., of the Atlantic coast of Honduras. The latter differs in having somewhat pubescent leaves with differently arranged, more elevated venation, and almost sessile flowers. *E. musarum*, described above, also is closely related, but has angled branches, leaf blades obtuse at the base, and much larger, short-pedicellate flowers.

Eugenia Steyermarkii Standl., sp. nov.—Arbor 15-metralis, ramis teretibus subferrugineis rimosis, novellis in sicco plus minusve compressis ferrugineis primo densiuscule sericeis cito glabratis, internodiis plerumque elongatis; folia modica breviter petiolata crasse coriacea, petiolo crasso 3–5 mm. longo primo sericeo, glabrescente; lamina late elliptica vel rotundo-elliptica 4–6 cm. longa 2–3.5 cm. lata apice obtusa usque rotundata, interdum subemarginata, basi acutiuscula usque fere rotundata, saepe abrupte breviter contracta, primo ut videtur sparse denseve adpresso-pilosa, saltem in statu adulto omnino glabra, supra pallide lutescens lucida, costa anguste profundeque impressa, nervis vix manifestis non elevatis, sparse punctata, subtus paullo pallidior, costa elevata, nervis lateralibus utroque latere ca. 12 tenerrimis fere rectis angulo recto vel paullo angustiore abeuntibus, venis obscuris; flores ut videtur in axillis solitarii, pedunculo puberulo ca. 5 mm. longo, pedicello paullo breviore; fructus siccus globosus 12 mm. diam. sparse puberulus vel glabratus; sepala ad apicem fructus persistentia crassa oblonga obtusa ca. 4 mm. longa.—Guatemala: Dept. San Marcos, between La Vega ridge along Río Vega and northeast slopes of Volcán de Tacaná, to 3 miles from Guatemala-Mexico boundary, vicinity of San Rafael, alt. 2,500–3,000 meters, February 20, 1940, *Julian A. Steyermark* 36210 (type in Herb. Field Mus.).

"Leaves firmly chartaceous, dark green above, pale green beneath." The species is a well marked one, noteworthy for its rather small, very broad, coriaceous leaves, and for the large, coriaceous calyx lobes. It is not altogether certain that the peduncles are 1-flowered, but they appear to be so.

MELASTOMACEAE

Conostegia Gleasoniana Standl. & Steyerm., sp. nov.—Frutex 2–3-metralis, ramis gracilibus vel crassiusculis, vetustioribus ferrugineis vel brunnescentibus glabratis teretibus, novellis dense pilis parvis sessilibus brunnescentibus vel ochraceis tomentosis, pilis aliis longis apice stellato-ramosis interdum intermixtis, internodiis plerumque brevibus; folia modica petiolata membranacea, petiolo gracili 1.5–3 cm. longo arcte stellato-tomentello vel glabrato, interdum cum pilis stellatis longistipitatis quoque consperso; lamina oblongo-lanceolata vel anguste elliptico-oblonga 8–20 cm. longa 3.5–6.5 cm. lata, apice acuta usque longe angusteque attenuata, basi acuta vel obtusa, fere integra vel remote obscure undulato-crenata, supra in sicco fuscescens vel lutescens vulgo minute pallido-puncticulata, interdum saltem in juventute sparse setoso-pilosa sed saepius fere omnino glabra, costa nervisque non elevatis, subtus fere concolor viridis sparse minuteque saltem ad costam venasque pilis minutis sessilibus stellatis conspersa, secus costam interdum pilis stellatis stipitatis onusta, 5-plinervia, pare superiore nervorum bene supra basin laminae nascente, nervis teneris prominentibus, venis tenerrimis prominulis laxe reticulatis; paniculae terminales sessiles et a basi ramosae vel breviter pedunculatae dense vel sublaxe multiflorae vulgo 5–7 cm. longae et fere aequilatae, ramis crassiusculis pilis sessilibus vel stipitatis et saepe cum ambobus intermixtis sparse denseve obsitis, suberectis vel adscendentibus, floribus vulgo in cymulas parvas trifloras breviter pedunculatas dispositis breviter crasseque pedicellatis; calyx in alabastro ovoideus vel ellipsoideus 4–5 mm. longus, basi acutiusculus, apice angustatus et apiculatus vel acutiusculus, sparse minuteque stellato-puberulus.—Guatemala: Dept. Alta Verapaz: Damp forest, limestone region of Cocolá, northeast of Carchá, alt. 1,200 meters, April 2, 1939, *Paul C. Standley* 70317 (type in Herb. Field Mus.). Mountains east of Tactic, on the road to Tamahú, alt. 1,500–1,600 meters, April 9, 1939, *Standley* 71078, 71086, 71305, 71329.

Among Guatemalan species of *Conostegia*, the present one is noteworthy for its small flowers. While the specimens exhibit some variation in pubescence, all appear to be conspecific. The pubescence of the leaves is scant, and at maturity the blades are, in fact, almost glabrous.

Mouriria Gleasoniana Standl., sp. nov.—Arbuscula vel arbor usque 12 m. alta saltem praeter flores omnino glabra, ramulis gracilibus sed rigidis vulgo cinnamomeis subteretibus rimosis, inter-

nodiis plerumque elongatis; folia mediocria brevissime petiolata in sicco coriacea et rigida, petiolo crasso vix ultra 3 mm. longo crasso; lamina oblonga vel lanceolato-oblonga 7.5–10 cm. longa 3–3.5 cm. lata subabrupte acuta vel breviter acuminata, basi paullo breviterque angustata et anguste rotundata, saepius emarginata, utrinque dense papilloso-pustulata, supra lutescens, costa non elevata, nervis obscuris, subtus paullo pallidior, costa crassiuscula elevata, nervis vulgo obscuris tenerrimis vix elevatis; pedunculi axillares plerumque solitarii ca. 1 cm. longi infra medium geniculati minute puberuli vel glabrati graciles; calyx 5–6 mm. latus, extus ut videtur sparse puberulus vel fere glaber, tubo basi late rotundato, limbo patente brevissime lobato persistente; fructus depresso-globosus et saepius didymus glaber ca. 13–14 mm. latus basi late rotundatus, seminibus 1–3.—Mexico: Achotal, Balancán, Tabasco, May, 1939, *E. Matuda* 3093 (type in Herb. Field Mus.). San Isidro, Balancán, Tabasco, June, 1939, *Matuda* 3339. Uvero, Oaxaca, alt. 30–90 meters, May, 1937, *L. Williams* 9398.—Guatemala: Dept. Izabal, Río Dulce, 2–4 miles west of Livingston, on south side (left side going up river), at sea level, April 16, 1940, *Steyermark* 39525; sterile; a shrub of 1–2 meters.

Regarding the tree Mr. Williams supplies the following notes: "Local name Frutillo. A tree 12 m. tall, the crown spreading; trunk straight, round, 25 cm. in diameter, unbranched for 4.5 m.; fruit yellow when unripe, reddish when mature, ripening in May. Wood used for railroad ties. Common on hill slopes in forest." Mr. Matuda states that the plant is a tree of 4–5 meters.

The new species is named for Dr. H. A. Gleason, student and monographer of the Melastomaceae. It is clearly related to *Mouriria Muelleri* Cogn., and the two Tabasco specimens have been so determined. *M. Muelleri* is represented in the Herbarium of Field Museum by a photograph of the type, *Jurgensen* 266 from the State of Oaxaca. As shown by this photograph, the leaves of *M. Muelleri* are decidedly different from those of *M. Gleasoniana*, being very obtuse or narrowly rounded at the apex and broad and more conspicuously emarginate at the base. The only *Mouriria* material in the Herbarium of Field Museum that resembles the type photograph is *Haenke* 1626, without locality but presumably from western Mexico. It is, however, by no means certain that this specimen really represents *Mouriria Muelleri*.

The most common *Mouriria* species of British Honduras and northern Guatemala, *M. exilis*, differs from *M. Gleasoniana* in having more evidently petiolate leaves acute or acutish at the base.

ONAGRACEAE

Fuchsia Seleriana Loes. Verh. Bot. Ver. Brandenb. 55: 179. 1913.—Most of the small-flowered Fuchsias of Mexico and Central America are much alike and closely related. The species have been based too often on characters that appear to be of little importance or stability, and it seems certain that as material accumulates in herbaria, at least some of the names will have to be reduced to synonymy. *Fuchsia Seleriana*, however, is better marked than most of its relatives, and apparently a perfectly good species. The type was collected near Chaculá in the Department of Huehuetenango, Guatemala, and another collection from the Department of Quezaltenango was cited by Loesener. The species is noteworthy in having dioecious flowers. Guatemala: Dept. Jalapa: Cerro Alcoba, just east of Jalapa, alt. 1,300–1,700 meters, *Steyermark* 32512; a shrub of 1–1.5 meters; leaves membranaceous, dull green above, silvery green beneath; stems purplish red; berries purplish red; corolla rose-orchid, the lobes orchid-colored outside, tinged with pale pink or white inside.—Dept. Guatemala: Santa Catarina Pinula, *Margaret Lewis* 392.—Dept. Sacatepéquez: Oak forest, Finca El Hato, northeast of Antigua, alt. 2,000 meters, *Standley* 61202; a shrub of 2 meters; flowers bright red.—Dept. Chimaltenango: Oak woods, plains near Tecpám, *Skutch* 489; a low shrub, rarely 2.5 meters high; flowers pinkish red; berries glossy black, almost 1 cm. in diameter. Tecpám, *J. R. Johnston* 761a.—Dept. Quezaltenango: Hedgerow near Quezaltenango, alt. 2,400 meters, *Skutch* 810. Volcán de Santa María, between Santa María de Jesús, Las Mojadas, and summit of the volcano, alt. 1,500–3,000 meters, *Steyermark* 34031; a shrub of 1.5–2.5 meters. At present the species is known definitely only from Guatemala, but *Sessé & Mociño* 5207 has been annotated by Dr. P. A. Munz as being probably *Fuchsia Seleriana*. Most of the Sessé and Mociño plants came from Mexico, but it is known or at least believed that those collectors visited Guatemala, and they are reported to have prepared a manuscript flora of the latter country.

ARALIACEAE

Sciadodendron excelsum Griseb. Bonplandia 6: 7. 1858.—Originally described from Panama, this small tree has been known to extend along the Pacific coast as far north as Salvador. It may now be reported even farther northward, from Guatemala: Dept. Chiquimula: Rocky outcrops along gorge of Río Chiquimula, between Santa Bárbara and Petapilla, 4–6 miles north of Chiquimula, alt.

350–420 meters, *Steyermark* 30271; a tree of 7.5 meters, most of the leaves borne at the top of the trunk.

UMBELLIFERAE

Hydrocotyle pusilla A. Rich. Ann. Sci. Phys. 4: 167. *pl. 52, f. 2.* 1820. *H. costaricensis* Rose, Journ. Wash. Acad. Sci. 17: 195. 1927.—In Central America this species has been recorded, so far as we know, only from Costa Rica, where it has been collected several times. It is widely dispersed in South America and West Indies, and Mathias (Brittonia 2: 206. 1936) cites its range as extending to Mexico. The following collections may be placed on record for Guatemala: Dept. Jalapa: Vicinity of Soledad, Montaña Miramundo, between Jalapa and Mataquescuintla, alt. 2,000–2,500 meters, creeping along brook among hepatics, *Steyermark* 32665. Potrero Carrillo, at Hierba Buena, 14 miles northeast of Jalapa, alt. 1,500–1,900 meters, creeping in wooded swamp on moist knolls, *Steyermark* 33042.—Dept. Chimaltenango: Near Río Pixcayó, between Chimaltenango and San Martín Jilotepeque, alt. 1,650–1,800 meters, creeping along a ditch, *Standley* 64334; creeping at edge of stream, *Standley* 64444.—Dept. San Marcos: Along road between San Sebastián at km. 21 and km. 8, 8–18 miles northwest of San Marcos, alt. 2,700–3,800 meters, creeping over wet rocks near base of a waterfall, *Steyermark* 35733.—Dept. Alta Verapaz: Mountains east of Tactic on road to Tamahú, creeping in dense, wet forest, alt. 1,600 meters, *Standley* 71224. The plant is rare or local in Guatemala, in contrast with *Hydrocotyle mexicana* Cham. & Schlecht., which grows almost everywhere in forests of middle and higher elevations.

Hydrocotyle ranunculoides L. f. Suppl. Pl. 177. 1781.—In Rose and Standley's account of the genus *Hydrocotyle* in Central America (Journ. Wash. Acad. Sci. 17: 194. 1927), *H. ranunculoides* was reported from Nicaragua, Costa Rica, and Panama. A few Guatemalan collections, all unfortunately sterile, are available from recent collections: Dept. Quezaltenango: Olintepeque, edge of river, common, alt. 2,415 meters, *Standley* 66004.—Dept. Chimaltenango: Finca La Alameda, near Chimaltenango, alt. 1,830 meters, floating in a small stream, *Standley* 59161; leaves very lustrous in the fresh state. Near Parramos, alt. 1,650–1,800 meters, *Standley* 59871.

ERICACEAE

Anthopterus Wardii Ball in Hook. Icon. 15: *pl. 1465.* 1884.—Of this rather curious plant, noteworthy for its 5-winged corolla,

ut a single collection was reported from North America by Albert C. Smith in his account of the Thibaudieae (Contr. U. S. Nat. Herb. 28: 408. 1932), *Pittier* 5652 from Cerro de Garagará, Darién, Panama. A second collection has now come to hand, from the same region: Crest, Cana–Cuasi trail, Prov. Darién, alt. 1,650 meters, February, 1940, *M. E. & R. A. Terry* 1569. "A shrub or tree(?). Calyx scarlet, the corolla white."

Disterigma panamense Standl., sp. nov.—Fruticulus epiphyticus sparse ramosus, ramis gracilibus usque 20 cm. longis nodosis subteretibus ferrugineis, internodiis brevibus, novellis dense pilis albidis patulis hispidulis; petioli subnulli; laminae patentes lineari-oblongae tenues 8–12 mm. longae 2.5–3 mm. latae acutiusculae, basi obtusae, sparse puberulae vel fere glabrae, integrae vel obsolete serrulatae, e basi trinerviae, sparse fusco-punctatae, marginibus tenuibus pallidis, nervis subtus prominulis vel saltem manifestis; flores breviter pedicellati vel subsessiles, bracteis inaequalibus stramineis striatis fere glabris, interioribus late ovalibus apice rotundatis usque 2.5 mm. longis, exterioribus late ovatis obtusis vel acutiusculis multo brevioribus; calyx fere glaber, lobis 4 acutis vel acutiusculis 2 mm. longis rigidis ciliatis; corolla glabra alba 5 mm. longa, tubo cylindraceo crassiusculo, lobis 4 triangularibus acutis suberectis; stamina corollam subaequantia, stylo aequilongo.—Panama: Rain forest, Cana–Cuasi trail, Chepigana District, Prov. Darién, Panama, alt. 1,650 meters, March 15, 1940, *R. A. & M. E. Terry* 1564 (type in Herb. Field Mus.).

Only time and further material will tell whether this is sufficiently distinct from the common South American *Disterigma empetrifolium* (HBK.) Drude to deserve specific status. Certain not too well marked structural characters and the distributional factors lead one to believe that it probably is distinct. *D. empetrifolium*, ranging in the Andes from Venezuela to Peru, occurs at 2,000 to 4,200 meters, a much greater elevation than that at which the Panama plant grows. The leaves of *D. panamense* are thinner, narrower, and more distinctly 3-nerved than those of *D. empetrifolium*, and they are widely divaricate rather than erect or ascending. The corolla, too, is somewhat smaller than in any or most of the South American collections.

SAPOTACEAE

Bumelia LeSueurii Standl., sp. nov.—Arbor, ramis crassiusculis nigrescentibus vel fusco-ferrugineis longitrorsum et interdum quoque transverse rimosis sparse spinosis, novellis densissime pilis

brunneis lucidis patulis pilosis, internodiis brevibus; spinae rigidae adscendenti-divaricatae 8–12 mm. longae; folia parva breviter petiolata subcoriacea vel rigide membranacea, petiolo crassiusculo 4–6 mm. longo dense patulo-piloso; lamina oblonga vel anguste oblonga 4.5–6.5 cm. longa 1.5–2.3 cm. lata, obtusa vel apice rotundata, basi obtusa vel anguste rotundata, rarius subacuta, supra in sicco cinereo-viridis glabra, minute pallido-puncticulata, nervis venisque prominulis atque reticulatis, subtus fere concolor ubique pilis brevibus pallidis brunnescentibus patulis e basi furcatis plus minusve intertextis pilosa, costa tenera prominente, nervis lateralibus prominulis remotis angulo lato abeuntibus; flores in axillis foliorum paucifasciculati vel interdum ut videtur singuli, pedicellis crassiusculis 3–4 mm. longis dense brunneo-tomentosis; sepala ovalia vel ovali-ovata 3.5 mm. longa extus dense brunneo-sericea apice obtusa vel rotundata, intus glabra; corolla extus glabra, lobis ut videtur in vivo reflexis oblongis obtusis 3 mm. longis; staminodia majuscula lineari-lanceolata attenuato-acuminata glabra breviter exserta, antheris oblongis breviter exsertis; stylus crassiusculus sepalis duplo longior glaber, ovario dense piloso.—Mexico: Río Bonito, Chihuahua, December, 1936, *Harde LeSueur* 1160 (type in Herb. Field Mus.).

Bumelia lanuginosa (Michx.) Pers., which extends from Texas into Tamaulipas, Coahuila, and Nuevo León, seems to be the closest relative of the tree here described. It differs, however, in having more or less cuneate leaves, numerous flowers on more elongate pedicels, broad corolla lobes, and a short, included style.

Chrysophyllum panamense Pittier, var. **macrophyllum** Standl., var. nov.—Folia magna, petiolo crasso 12–25 mm. longo; lamina ovalis usque late elliptica vel late elliptico-oblonga vulgo 20–33 cm. longa et 10–13.5 cm. lata, breviter cuspidato-acuminata, basi subtruncata usque acutiuscula, subtus aliquanto pallidior sparse minuteque sericea vel fere glabra; corolla sparse vel dense sericea; fructus quam in forma typica speciei major, seminibus vulgo 4, interdum 1–3 vel 5.—Panama: Barro Colorado Island, Canal Zone: Near Laboratory, Snyder-Molino Trail, September 3, 1937, *James Zetek* 3810 (type in Herb. Field Mus.); March 19, 1937, *Zetek* 3810. Wheeler Trail, July, 1931, *D. E. Starry* 118. Snyder-Molino Trail, March 5, 1932, *Otis Shattuck* 778.

Excellent material of this *Chrysophyllum* has been forwarded by Mr. Zetek, who believes that it constitutes a new species, distinct from *C. panamense*, which possibly may be the case. It differs from the typical form of the species in its substantially larger leaves and

n its larger fruits with more numerous seeds. What is taken to be he typical form of *C. panamense* has normally one seed in each fruit, ut sometimes two. The number of seeds probably is variable, and here is no well marked difference in leaf size, while the flowers appear o be identical in the two forms. It therefore seems necessary to egard the large-leafed tree as only a variety of *C. panamense.*

Lucuma Austin-Smithii Standl., sp. nov.—Arbor 12-metralis, runco 30 cm. diam., ramulis crassiusculis primo densissime brunneo-ericeis, serius glabratis, internodiis brevibus; folia majuscula petio-ata tenuiter coriacea, petiolo gracili 1.5–2 cm. longo dense brunneo-ericeo vel glabrato; lamina obovato-oblonga vel oblanceolato-blonga, interdum elliptico-oblonga, 10–17 cm. longa 4–7.5 cm. lata, apice acuta vel subacuminata usque rotundata, basi acuta vel inter-lum cuneato-angustata, supra in sicco sublucida fusco-brunnescens, primo dense brunneo-sericea sed cito glabrata et in statu adulto omnino glabra, costa nervisque non elevatis, nervulis prominulis atque arcte reticulatis, subtus multo pallidior, in statu juvenili den-sissime brunneo-sericea, in statu adulto ubique pilis arcte adpressis brunnescentibus et griseis sat dense sericea, costa crassiuscula promi-nente, nervis lateralibus utroque latere ca. 16 prominentibus teneris subarcuatis angulo lato divergentibus juxta marginem arcuato-junctis, venulis inconspicuis sed prominulis et arcte reticulatis; flores axillares solitarii vel geminati, pedicellis gracilibus rectis 9–11 mm. longis dense brunneo-sericeis; sepala 4, 2 exterioribus florem invol-ventibus late ovalibus 7 mm. longis apice rotundatis vel obtusissimis extus dense minuteque brunneo-sericeis, interioribus 2 conformibus et aequilongis extus fere glabris, intus glabris; ovarium densissime villosum, stylo glabro crassiusculo recto 3.5 mm. longo.—Costa Rica: La Peña de Zarcero, Cantón Alfaro Ruiz, Prov. Alajuela, alt. 1,575 meters, in cloud forest of Caribbean watershed, October 22, 1938, *Austin Smith* H1280 (type in Herb. Field Mus.).

"Trunk erect, 30 cm. in diameter at the base. Bark dark cin-namon-brown. Leaves thinly coriaceous, rigid, faintly shining, dark green above, buff-green on the lower surface; outer sepals bronzy green, the inner ones pale yellowish. The tree emits a sticky, milky sap."

Lucuma Durlandii Standl. Trop. Woods 4: 5. 1925.—The tree has been collected numerous times in Petén, Guatemala, whence originally described, as well as in British Honduras. Three recent collections indicate a much wider range for it: Guatemala: Dept. Izabal, bay of Santo Tomás, between Escobas and Santo Tomás,

at sea level, *Steyermark* 39228; a tree; leaves firmly chartaceous, dark green above, pale grass-green beneath; flowers white.—Mexico: La Palma, Balancán, Tabasco, in virgin forest, *Matuda* 3297 (determined by Lundell); a small tree with green fruits. Tamazunchale, San Luis Potosí, in forest on hillside, alt. 300 meters, *C. L. & Amelia A. Lundell* 7199; a tree of 12 meters, the trunk 15 cm. in diameter; corolla white.

Sideroxylon Steyermarkii Standl., sp. nov.—Arbor 7–9-metralis, ramulis crassis subteretibus fusco-ferrugineis longitrorsum rugosis, novellis sparse denseve pilis cinereis et brunnescentibus intermixtis sericeis, cito glabrescentibus, internodiis brevibus; folia modica vel magna breviter petiolata subcoriacea et subrigida, petiolo crassiusculo 1–2 cm. longo sparse sericeo vel glabrato; lamina oblanceolato-oblonga vel obovato-oblonga 10–21 cm. longa 3.5–9.5 cm. lata, apice obtusa vel saepius rotundata, basin versus arcuato-angustata vel cuneato-angustata, basi ipsa cuneato-acuta, supra in sicco viridis glabra, costa subimpressa, nervis planis, subtus paullo pallidior, primo sparse pilis arcte adpressis griseis sericea, serius glabrata, costa gracili elevata, nervis lateralibus utroque latere 9–14 teneris subarcuatis prominentibus angulo latiusculo adscendentibus juxta marginem sursum curvatis et junctis, venis prominulis inconspicuis laxe reticulatis; flores e nodis nudis infra folia nascentes fasciculati, pedicellis fructiferis crassis angulatis glabratis 1.5–2 cm. longis; sepala ca. 6 inaequalia arcte imbricata brunnescentia glabra vel glabrata 2.5–3 mm. longa apice obtusa usque subrotundata; stylus crassus sursum attenuatus ca. 2 mm. longus; fructus monospermus late ovoideus glaber in sicco lucidus ca. 2 cm. longus et 1.5 cm. latus, sessilis et basi rotundatus, apice subacutus; semen laeve ca. 1.5 cm. longum pallide lutescens.—Guatemala: Dept. Quezaltenango: Quebrada Canalá, along Río Samalá between Santa María de Jesús and Calahuaché, alt. 1,200–1,300 meters, January 9, 1940, *Julian A. Steyermark* 33858 (type in Herb. Field Mus.); local name Cacho de venado; a tree with milky sap; leaves coriaceous, stiff, dark green above, pale green beneath, the nerves prominent; fruit green, about 2 cm. long and 1.5 cm. broad, pointed at the apex, turbinate, dull olive-green.—Dept. Suchitepéquez: Southern, lower slopes of Volcán de Zunil, vicinity of Finca Las Nubes, along Quebrada Chita, east of Pueblo Nuevo, alt. 500–800 meters, February 2, 1940, *Steyermark* 35409; leaves dark, rich green above, pale green beneath.

Although corollas are absent, from the general appearance of the flowers and foliage, this tree appears almost certainly referable to

he genus *Sideroxylon*. In that group it is well marked by its very btuse or rounded, rather short-petiolate leaves.

PRIMULACEAE

Centunculus minimus L. Sp. Pl. 116. 1753.—As limited by Pax and Knuth (Pflanzenreich IV. 237: 334. 1905), the genus *Centunculus* consists of a single species, *C. pentandrus* R. Br., reported from various parts of Mexico and Central America, being referred by those authors to the synonymy of *Anagallis pumila* Sw. *C. minimus* has a wide range in both the eastern and western hemispheres, but is not recorded, so far as available literature indicates, from Central America. Two collections have been made in Guatemala: Dept. San Marcos: Along Quebrada Canjulá, between Sibinal and Canjulá, Volcán de Tacaná, marshy, open meadow, alt. 2,200–2,500 meters, *Steyermark* 35972. Along road between San Sebastián at km. 21 and km. 8, 8–18 miles northwest of San Marcos, alt. 2,700–3,800 meters, in spring-fed meadow along a quebrada, *Steyermark* 35594.

Lysimachia Steyermarkii Standl., sp. nov.—Herba ut videtur adscendens vel decumbens, caule elongato crasso ad nodos radicante, caulibus ultimis erectis 16–19 cm. longis simplicibus ochraceis ut videtur subcarnosis, glabris vel superne sparse pilis longis patentibus villosis; folia alterna petiolata membranacea, petiolo 4–15 mm. longo crasso saepe rubro vel purpurascente submarginato sparse villoso; lamina late ovata usque elliptica vel lanceolato-elliptica 3–6 cm. longa 1.5–2.5 cm. lata acuta vel subacuminata, basin versus plus minusve angustata, interdum contracta et decurrens, basi saepius acuta vel subobtusa, supra viridis sparse villosa vel fere glabra, subtus paullo pallidior, sparse villosa vel fere glabra, dense punctata, costa crassiuscula, nervis paucis inconspicuis valde obliquis angulo angusto adscendentibus; flores in axillis foliorum supra medium caulis fasciculati, pedicellis gracillimis 1.5–2 cm. longis rectis vel flexuosis sparse villosis; sepala in statu fructifero 5 mm. longa persistentia oblongo-lanceolata acuta vel acuminata dense punctata unicostata fere libera; capsula sepalis aequilonga glabra, valvis lanceolato-oblongis.—Guatemala: Dept. Quezaltenango: Moist, steep banks at base of rocky cliff, Volcán de Zunil, alt. 2,500–3,800 meters, January 22, 1940, *Julian A. Steyermark* 34772 (type in Herb. Field Mus.).

Although the genus is rather well represented in the United States, but one species has been reported in North America south of the Mexican border, *L. mexicana* Knuth, of the mountains of

Oaxaca, Mexico. *L. Steyermarkii* is related to that and to its ally, *L. chilensis* (Griseb.) Knuth, of southern Chile, but it differs from both in its sessile rather than long-pedunculate fascicles of flowers. Its leaves, too, are relatively much broader than those of *L. mexicana*.

GENTIANACEAE

Lisianthus arcuatus Perkins, Bot. Jahrb. 31: 492. 1902.—Heretofore the species has been recorded definitely only from Costa Rica, but a not very recent collection that has lain in the herbarium without study until now attests its occurrence also in Honduras: Cuyamel, on hills, March, 1924, *M. A. Carleton* 584. The corollas are slightly shorter than those of most Costa Rican specimens, but otherwise the plants are all alike.

APOCYNACEAE

Zschokkea Standleyi Woodson in Standl. Bot. Ser. Field Mus. 22: 44. 1940. *Lacmellea edulis* Woodson, N. Amer. Fl. 29: 141. 1938, non Karst.—An attempt to determine a recent Steyermark collection, cited below, has resulted, it is believed, in clarifying the status of the so-called *Lacmellea* several times reported from British Honduras. *Lacmellea edulis* Karst. was described from the Río Meta, Colombia, and the senior author some years ago made the mistake of referring to the same species material collected on Barro Colorado Island, Panama, later described by Woodson as *Zschokkea panamensis*. Woodson's studies showed also that the British Honduras specimens determined by the senior author as *Lacmellea edulis* really belonged to that Colombian species. It always has seemed strange that the Colombian plant should skip across all of Central America to appear in British Honduras. Some species do have such an interrupted distribution, so far as present records indicate, but in their cases there are no closely related species found at intervening localities.

Study of the available material of so-called *Lacmellea*, including that of the Missouri Botanical Garden Herbarium, kindly lent for study by Dr. J. M. Greenman, shows that actually it is identical with the species described by Dr. Woodson in 1940 as *Zschokkea Standleyi*. All the British Honduras material previously available bore only buds, with no developed corollas. As *Zschokkea* and *Lacmellea* have been separated, the former has relatively short corolla lobes, much shorter than the tube, and the anthers are inserted near the top of the tube; in *Lacmellea* the corolla lobes about equal the tube, and the anthers are inserted near the middle of the tube. In

the undeveloped corollas of the British Honduras tree, the corolla tube is at first short, and the anthers *are* borne near its middle; but, when the corolla is ready to open, as shown by the Guatemalan specimens cited below, the tube has become much longer, and the anthers, although they have actually maintained their former position, are now near the apex of the elongate tube.

From all this it seems clear that the material cited below from Guatemala and British Honduras is congeneric and conspecific, that it is not *Lacmellea edulis*, and that the proper name for it is *Zschokkea Standleyi* Woodson. However, there are further complications of the subject, which can not be resolved at the present time. If one consults Karsten's plate of *Lacmellea edulis* (Fl. Columb. *pl. 152*), there immediately arises a suspicion that he also may have dealt with material with only young and incompletely developed corollas. Both the habit sketch and the flower dissections lead one to suspect as much. Unfortunately, no South American material of *Lacmellea* is available to the writers, but they will not be surprised if ultimately *Lacmellea* and *Zschokkea* prove to be congeneric. That would be unfortunate, since the name *Lacmellea* antedates *Zschokkea*, and under the latter genus a good many species have been described.

The following material of *Zschokkea Standleyi* is now at hand: Guatemala: Dept. Izabal: In pasture near Entre Ríos, common, alt. 18 meters, April, 1939, *Standley* 72587, type of *Z. Standleyi;* a tree of 4.5–6 meters; corolla cream-colored. Between Virginia and Lago de Izabal, Montaña del Mico, alt. 50–500 meters, April 5, 1940, *Steyermark* 38886; a tree of 11 meters; leaves subcoriaceous, dark, rich green above, pale grass-green beneath; calyx tube green; corolla tube greenish white, swollen at the base, the lobes white.—British Honduras: Río Blanco, April, 1929, *N. S. Stevenson* 120 (Yale School For. 14902); a sterile specimen; local names Palo de vaca and Cow tree; a small tree. Río Grande, in river swamp, alt. 15 meters, *Schipp* 1234; a tree of 9 meters; fruit yellow; wood soft; latex white. Temash River, alt. 30 meters, in swamp forest, February 18, 1935, *Schipp* 1326; local name Vaca; a tree of 9 meters; flowers creamy white; the trunk has woody spines; the latex is good to drink but a bit tacky. Without definite locality, *J. B. Kinloch* 11; local name Prickly vaca.

CONVOLVULACEAE

Ipomoea Davidsoniae Standl. Bot. Ser. Field Mus. 22: 98. 1940.—A second and better preserved specimen of this recently

described species has been received: Panama: Near Camiseta, Volcán de Chiriquí, Boquete District, Prov. Chiriquí, alt. 2,100 meters, February, 1940, *M. E. Terry* 1368. "Corolla pale lavender at the margin, the throat deep lavender or purple." The peduncles equal or exceed the leaves, being 6–8 cm. long, and they bear few or numerous, densely congested flowers, which are either sessile or borne on short, stout pedicels.

Jacquemontia pinetorum Standl. & Steyerm., sp. nov.—Videtur fruticosa, ramosa, ramis crassis fusco-ferrugineis subteretibus, novellis dense velutino-pilosis, pilis patulis sordidis, internodiis brevibus vel elongatis; folia parva longipetiolata herbacea petiolo gracili 5–14 mm. longo dense patulo-piloso; lamina late deltoideo-ovata usque oblongo-ovata 2–2.5 cm. longa 1–1.7 cm lata subacuminata usque obtusa, basi breviter cordata, utrinque pilis cinereis vel sordidis dense molliter velutino-pilosa; cymae axillares dense pauci- vel multiflorae corollis exclusis vix ultra 12 mm latae, pedunculis plerumque 2.5–3.5 cm. longis folia aequantibus vel longioribus, floribus congestis breviter pedicellatis, bracteis parvis subulatis; sepala 3–3.5 mm. longa extus densissime velutino-pilosa rotundato-ovata apice obtusa; corolla caeruleo-purpurea extus glabra ca. 8 mm. longa.—Guatemala: Dept. Izabal: Open, rocky places along road in pine forest, between Milla 49.5 and ridge 6 miles from Izabal, Montaña del Mico, alt. 65–600 meters, April 1, 1940, *Julian A. Steyermark* 38533 (type in Herb. Field Mus.).

Corolla lavender-purple; stems creeping, or ascending at the tips; calyx pale green; leaves soft, membranaceous, dull grass-green above, gray beneath. Apparently an unusually well marked member of this genus. Related species are *J. nodiflora* (Desr.) Don, which has sessile or short-pedunculate inflorescences and glabrous or almost glabrous sepals; and *J. simulata* House, which has a larger white corolla.

POLEMONIACEAE

Cobaea Skutchii I. M. Johnston, Journ. Arn. Arb. 19: 128, 1938.—Described from Palmar, Dept. Quezaltenango, at 1,220 meters, *Skutch* 1456, this species is well marked by its small corolla and especially by the very broad calyx lobes. Two later collections of it have been made in Guatemala: Dept. Escuintla: Wet forest, Finca Monterrey, south slope of Volcán de Fuego, alt. 1,200 meters, *Standley* 64538; an herbaceous vine; corolla pale green.—Dept. Quezaltenango: Along Quebrada San Gerónimo, Finca Pireneos

lower, south slopes of Volcán de Santa María, alt. 1,300–2,000 meters, *Steyermark* 33388.

Cobaea tomentulosa Standl. Contr. U. S. Nat. Herb. 17: 457. 1914.—The type was collected near Zunil, Guatemala, at about 2,400 meters, *E. W. Nelson* 3683. The plant seems to be rare, for only one recent collection of it has been made: Guatemala: Dept. Quezaltenango, Volcán de Zunil, alt. 2,500–3,800 meters, *Steyermark* 34674; local name Flor de campana; corolla light yellow-green, the lobes vertically sulcate or wrinkled; calyx grass-green; fruit pale green, mottled with dull purple; leaves membranaceous, rich green above, slightly paler beneath. The species is noteworthy among the several Guatemalan ones for its very large corollas.

VERBENACEAE

Clerodendron pithecobium Standl. & Steyerm., sp. nov.—Frutex epiphyticus scandens, ramis crassiusculis nodosis obtuse subangulatis sordido-ochraceis, internodiis 2.5–4 cm. longis, interdum sublucidis, novellis dense strigosis cito glabratis; folia opposita petiolata subcoriacea, petiolo crasso vulgo 10–12 mm. longo primo sparse strigoso, cito glabrato; lamina oblongo-elliptica vel elliptico-obovata saepius 6–12.5 cm. longa et 4–7.5 cm. lata, apice obtusa usque rotundata et interdum brevissime apicata, basi acuta vel obtusa, supra in sicco fuscescens glabra, costa nervisque impressis, subtus fere concolor lucida primo sparse strigosa sed cito glabrata, minute puncticulata, costa tenera elevata, nervis lateralibus utroque latere ca. 5 tenerrimis prominentibus arcuatis vel fere rectis aliquanto irregularibus angulo ca. semirecto adscendentibus remote a margine junctis, venis obscuris; flores axillares solitarii, pedicellis gracilibus glabris 12–20 mm. longis; calyx campanulatus glaber in sicco subcoriaceus 5–6 mm. longus basi obtusus subcostatus, subtruncatus et brevissime 5-dentatus, dentibus remotis erectis vix 1 mm. longis; corolla purpureo-rubra extus glabra, tubo crassiusculo recto fere 3 cm. longo tereti 4 mm. lato sursum non dilatato, lobis paullo inaequalibus ca. 4 mm. longis late ovalibus vel subrotundatis apice rotundatis ciliatis; stamina inclusa.—Guatemala: Damp, dense forest, La Shuya, southwest of San Martín Chile Verde, Dept. Quezaltenango, alt. 1,620 meters, March 8, 1939, *Paul C. Standley* 67887 (type in Herb. Field Mus.).

While the generic position of this plant probably is somewhat uncertain, it is obviously closely related to the recently described (Bot. Ser. Field Mus. 22: 99. 1940) *Clerodendron Moldenkeanum* Standl.,

whose type was collected in the region of Volcán de Tacaná, Chiapas. In that the calyx lobes are linear-subulate and 5–6 mm. long.

Verbena teucriifolia Mart. & Gal. Bull. Acad. Brux. 11, pt. 2: 322, 1844.—In Miss Perry's monograph of the genus *Verbena* (Ann. Mo. Bot. Gard. 20: 334. 1933) this species is reported outside Mexico only from Quezaltenango, Guatemala. While in Guatemala it is commoner about Quezaltenango than elsewhere, it does extend considerably farther east. The following recent collections, some of them determined by Miss Perry, have been made in this country: Dept. San Marcos: In field, 2 km. below town of Tajumulco, Volcán de Tajumulco, alt. 1,800 meters, *Steyermark* 36859; stems spreading; corollas purple.—Dept. Quezaltenango: Prostrate on sand, along eastern side of Río Samalá, opposite Santa María de Jesús, alt. 1,500 meters, *Steyermark* 35060. Dry, rocky hillside, Cerro La Pedrera, south of Quezaltenango, alt. 2,400 meters, *Standley* 65521; plants prostrate, common; corolla rose-purple. Near Quezaltenango, open bank, prostrate, alt. 2,300 meters, *Standley* 66437.—Dept. Chimaltenango: Finca La Alameda, near Chimaltenango, alt. 1,800 meters, *J. R. Johnston* 794, 720.

LABIATAE

Satureja Seleriana Loes. Verh. Bot. Ver. Brandenb. 51: 35. 1909.—The type was collected by Seler in *Cupressus* forest of Sierra Santa Elena, above Tecpám, Dept. Chimaltenango, Guatemala. There is cited in addition, with the original description, *Heyde & Lux* 3125 from Chiul, Dept. Quiché, and Loesener published (op. cit. 36) a var. *guatemalensis*, based on a Seler collection from Todos Santos, Dept. Huehuetenango. The plant seems to be decidedly local in Guatemala, and a good part of the specimens cited below were obtained at the type locality—if not from the same plants! It is a handsome shrub because of its rather large and brilliantly colored flowers, which, however, are produced in no great abundance. Guatemala: Dept. Chimaltenango: Sierra Santa Elena, alt. 2,300 meters, December, 1929, *Jorge G. Salas* 1398. Chichoy, *J. R. Johnston* 764, 1638. Cerro de Tecpám, region of Santa Elena, alt. 2,400–2,700 meters, in *Cupressus* forest, *Standley* 61119, 60959, 58796; a slender shrub of 1–2 meters, common, the corolla bright red.—Dept. Quiché: Mount María Tecúm, alt. 3,000 meters, April, 1937, *W. C. Muenscher* 12358. Some of the specimens cited may have reached other herbaria under a manuscript name, as a supposed new species, assigned to the plant by the senior author.

SOLANACEAE

Athenaea locuples Standl. & Steyerm., sp. nov.—Arbuscula 6-metralis ut videtur laxe ramosa, ramis vetustioribus ochraceis, novellis viridibus crassis dense brevissime sordido-villosulis, in sicco obtuse angulatis, internodiis plerumque brevibus; folia solitaria magna longipetiolata membranacea, petiolo gracili 3.5–7.5 cm. longo dense breviterque viscido-villosulo; lamina late ovata vel subrhombeo-ovata vulgo 10–18 cm. longa et 6.5–13 cm. lata acuminata vel longiacuminata, basi late rotundata usque obtusa, ima basi interdum subito contracta et breviter decurrens, subintegra vel saepius remote grosseque repando-dentata vel fere sublobata, dentibus late triangularibus patulis, supra in sicco fusco-viridis sat dense pilis brevibus non viscidis villosula, subtus concolor, dense ubique pilis brevibus viscido-villosula; flores numerosissimi in axillis fasciculati, pedicellis gracilibus 2–2.5 cm. longis dense viscido-puberulis; calyx campanularis viridis baccam arcte amplectens in statu fructifero 6–8 mm. altus et aequilatus vel paullo latior breviter dentatus, dentibus subremotis triangularibus acutis vel subacuminatis in fructo subincurvis, extus dense viscido-puberulus; bacca subglobosa ca. 8 mm. lata glabra apice late rotundata; semina numerosa 1 mm. vel paullo ultra diam. sublucida brunnea subprofunde foveolata.—Guatemala: Dept. San Marcos: Dry, rocky, pine flat, above Finca El Porvenir, along Río Cabús to within two miles of Cueva de las Palomas, south-facing slopes of Volcán de Tajumulco, alt. 1,300–1,500 meters, March 16, 1940, *Julian A. Steyermark* 37953 (type in Herb. Field Mus.); leaves soft and membranaceous, rich green above, dull green beneath; fruit globular, dark green turning dull red.

The species is noteworthy for the very abundant flowers, which form umbel-like fascicles. The flowers are much smaller than those of *A. macrocardia*, described below, and the leaves are usually rounded, never cordate, at the base.

Athenaea macrocardia Standl. & Steyerm., sp. nov.—Herba erecta 3-metralis, ramis crassis fusco-ochraceis teretibus ubique dense pilis laxis patentibus longiusculis plurilocularibus ut videtur non viscidis villosis, internodiis elongatis; folia magna solitaria longipetiolata membranacea subaequalia, petiolo gracili 4–10 cm. longo dense villoso; lamina late ovata undulata vel utroque latere breviter pauci-angulata 15–24 cm. longa 9–17 cm. lata subabrupte acuminata vel longiacuminata, basi insigniter obliqua profunde cordata, sinu 1–3 cm. alto, supra in sicco fuscescens ubique viscido-puberula vel villosula, ad nervos densius longiusque villosula, subtus paullo palli-

dior ubique dense pilis longis brevibusque intermixtis viscido-villosula, pilis longioribus laxe patulis plurilocularibus pallidis; flores in axillis fasciculati pauci vel numerosi, pedicellis gracilibus 2.5–5 cm. longis dense pilis laxis patulis villosis; calyx florifer ca. 13 mm. longus, in statu fructifero auctus et baccam arcte involvens, profunde, saepe fere ad basin, lobatus, dense viscido-villosus, segmentis e basi late ovata attenuato-acuminatis; corolla fere rotata extus dense villosa fere 1.5 cm. longa, profunde lobata, segmentis ovali-ovatis subobtusis intus glabris; filamenta antheris subaequilonga puberula, antheris oblongis crassis 4.5 mm. longis rimis lateralibus dehiscentibus apice subemarginatis glabris; stylus gracilis dense puberulus; bacca subglobosa ca. 1.5 cm. diam. glabra, apice late rotundata; semina subglobosa luteo-brunnea 1.5 mm. diam., dense foveolata sublucida. —Guatemala: Dept. Zacapa: Pine-covered canyon bordering Río Lima, Sierra de las Minas, below Finca Alejandria, alt. 2,000 meters, October 14, 1939, *Julian A. Steyermark* 30004 (type in Herb. Field Mus.); corolla with spreading lobes, pale yellow-cream with olive-green spots around the base; anthers brownish black; fruit orange.

Marked by the large, deeply cordate leaves, suggestive of those of some species of *Cyphomandra*, and by the very large flowers and fruits and deeply lobed calyx.

Brunfelsia nyctaginoides Standl. Bot. Ser. Field Mus. 22: 47. 1940.—Described only recently from Volcán de Tacaná, Chiapas, Mexico, this plant was collected several times during early 1940 in the mountains of extreme western Guatemala, where it is abundant locally, and exceedingly showy. It is, in fact, one of the most beautiful and conspicuous plants of the region, because of its great abundance of large, brilliantly colored flowers. When the species was described, its author was doubtful regarding its generic position, and some of this doubt still persists, in spite of the ample specimens now available for study. As a matter of fact, the plant appears to be something of a connecting link between the genera *Browallia*, *Brunfelsia*, and *Streptosolen*, but probably best placed, after all, in *Brunfelsia*. The flower color and somewhat woody habit seem to exclude it from *Browallia*, whose species are normally annuals. *Brunfelsia nyctaginoides* closely resembles *Streptosolen* in general appearance and habit, but in that genus the corolla tube is definitely curved, and near the base it is slightly twisted. The corolla tube of the Guatemalan plant can scarcely be said to be curved, but in most of the pressed and dried flowers it is perfectly straight, and at the base it is not at all twisted. The following new collections may be

placed on record: Guatemala: Dept. San Marcos: In mixed forest bordering barranco, between town of Tajumulco and Tecutla, northwestern slopes of Volcán de Tajumulco, alt. 1,800–2,500 meters, February 27, 1940, *Steyermark* 36747; a large, climbing herb; corolla tube orange with greenish at the base, the lobes vermilion flame-scarlet, the orifice orange; leaves membranaceous, dull green above, pale beneath. In sun or shade, along Quebrada Canjulá, between Sibinal and Canjulá, Volcán de Tacaná, alt. 2,200–2,500 meters, February 18, 1940, *Steyermark* 36016; a sprangling half-shrub, half-climbing; leaves olive-grass-green; corolla scarlet, the orifice golden yellow. Common at higher elevations in *Abies* forest, between San Sebastián and Todos Santos, upper slopes of Volcán de Tajumulco, alt. 3,000–3,800 meters, March 1, 1940, *Steyermark* 36950; herbaceous. It may be noted that the color of the corolla is almost identical with that reported for *Streptosolen Jamesonii*, an Ecuador plant sometimes grown for ornament in California and elsewhere.

Cyphomandra Rojasiana Standl. & Steyerm., sp. nov.—Frutex 3-metralis, ramis teretibus dense minute puberulis vel subhirtellis, pilis brevibus rectangule patulis, nodis in sicco constrictis; folia inaequalia longipetiolata firme membranacea integra, petiolo usque 8.5 cm. longo minute denseque hirtello; lamina asymmetrice lateque ovata 12–22 cm. longa et 9–14 cm. lata vel ultra, abrupte breviter acuminata vel subobtusa, basi inaequali profunde angusteque cordata, sinu lato vel angusto aperto, lobis posticis late rotundatis, supra in sicco intense viridis vel subfusca minutissime sparse puberula, ad costam nervosque minute dense hirtella, subtus concolor, saltem ad nervos breviter hirtella, costa crassa, nervis lateralibus utroque latere ca. 6, venis laxe reticulatis inconspicuis; inflorescentiae axillares umbelliformes ca. 4-florae, pedunculo gracili fere 2 cm. longo viscido-puberulo, pedicellis gracilibus 8–15 mm. longis vel in statu fructifero usque 3 cm. vel ultra dense glanduloso-puberulis; calyx ca. 3 mm. longus et 5 mm. latus basi acutus extus sparse glanduloso-puberulus, lobis late triangularibus vel rotundo-ovatis obtusis vel apice fere rotundatis ad margines dense tomentellis; corolla in alabastro late ovoidea ca. 7 mm. longa extus fere glabra sed ad margines segmentorum dense hirtella, ad anthesin ca. 14 mm. longa fere ad basin lobata, lobis lanceolato-oblongis apicem subobtusum versus angustatis, intus glabris, patentibus; antherae fere sessiles oblongae 5 mm. longae crassae glabrae, apice poris 2 magnis dehiscentes; bacca immatura ellipsoidea 3.5 cm. longa fere 2 cm. lata apice acutata, basin versus paullo angustata, sessilis, primo dense

minuteque hirtella, glabrescens.—Guatemala: Dept. Suchitepéquez: In ravine, Finca Moca, alt. 990 meters, October 20, 1934, *Alexander F. Skutch* 1472 (type in Herb. Field Mus.); a straggling shrub to 3 meters high; stems and foliage with a sickening scent; petals green on the outer surface, bronze on the inner; fruit yellow, aromatic.—Dept. Quezaltenango: In thickets on forested slopes, lower, south-facing slopes of Volcán de Santa María, between Finca Pireneos and Los Positos, between Santa María de Jesús and Calahuaché, alt. 1,300–1,500 meters, January 8, 1940, *Steyermark* 33743; a shrub of 3 meters; leaves firmly membranaceous, dark green above, light grass-green beneath; outside of corolla lobes green, the inside purple, shining and bordered with green; anthers light buff-orange; fruit light yellow with rich green stripes and splotches at the apex, pointed at each end, 5 cm. long, 3 cm. broad.

The type was distributed as *Cyphomandra betacea* Sendtn., a South American species, the so-called tree tomato, which sometimes is cultivated in Central American gardens. *C. Rojasiana* is named for Professor Ulises Rojas. It is related to *C. costaricensis* Donn. Smith, a species common along the Atlantic coast of Central America from Honduras to Panama. In the latter the anthers are much shorter than those of *C. Rojasiana*, and they are densely viscid-puberulent or papillose rather than glabrous. The corolla of *C. costaricensis*, also, is much narrower in bud, and much longer in anthesis.

Lycianthes vulpina Standl. Field Mus. Bot. 4: 321. 1929.—Described from the Lancetilla Valley near Tela, Atlantic coast of Honduras, this vine has been found several times on the Atlantic slope of Honduras, and also in British Honduras. Naturally to be expected from the intervening coast of northern Guatemala, it may now be reported definitely from the last country: Dept. Izabal: Wet forest, Escoba, across the bay from Puerto Barrios, at sea level, *Standley* 72917; a coarse, subscandent, branched shrub, the corolla purplish white.

Solanum celsum Standl. & Morton, Bot. Ser. Field Mus. 18: 1077. 1938.—Based upon *Skutch* 2364 from El General, Costa Rica, at 950 meters. A recent collection from Panama represents the same species: Cana–Cuasi trail, Camp 2, Chepigana District, Prov. Darién, alt. 600 meters, March, 1940, *M. E. & R. A. Terry* 1498. A shrub of 2.5–4.5 meters. The specimen bears globose fruits 8 mm. in diameter.

SCROPHULARIACEAE

Berendtia rugosa (Benth.) Gray, Proc. Amer. Acad. 7: 380. 868. *Diplacus rugosus* Benth. in DC. Prodr. 10: 368. 1846. *B. hiesbrechtii* Gray, loc. cit.—The genus *Berendtia* consists of four pecies, all of which were described from Mexico, and have been eported only from that country. The present species, however, xtends into western Guatemala: Dept. Huehuetenango: Rocky nountain side, Chiantla, alt. 2,100–2,400 meters, *Skutch* 1134. Near hiantla, brushy, rocky slope, *Standley* 65667; a shrub of 1.5 meters; orolla red. Sierra de los Cuchumatanes, above Chiantla, dry or noist, shaded cliffs, alt. 1,950–2,550 meters, *Standley* 65633, 65660; shrub of 1–1.5 meters, very viscid, frequent in this region.

Ghiesbreghtia grandiflora Gray, Proc. Amer. Acad. 8: 630. 1873.—The genus is monotypic, based upon material collected in he dry region of Chiapas, Mexico. In Guatemala it was collected many years ago by Heyde and Lux at San Miguel Uspantán, Quiché. Apparently the tree is a rare one, and it is worth while to place on record a new collection, which extends considerably the known range: Guatemala: Dept. Chiquimula, along Río Tacó, between Chiquimula and Montaña Barriol, 3–15 miles northwest of Chiquimula, alt. 500–1,200 meters, October, 1939, *Steyermark* 30666; a tree of 6 meters. The specimens are in fruit.

Russelia laciniata Standl. & Steyerm., sp. nov.—Frutex 60–90 cm. altus ramosus, ramis gracillimis omnibus teretibus pallide viridibus glabris nodosis, internodiis elongatis; folia modica opposita sessilia vel vix 2 mm. longe petiolata ovata vel saepius late rhombico-ovata 5–8 cm. longa plerumque 2–5 cm. lata acuminata vel longiacuminata, infra medium vulgo basin versus plus minusve cuneato-angustata, basi ipsa late cuneata usque subrotundata, crasse membranacea, margine fere ubique saltem supra partem tertiam infimam profunde inciso-dentato vel laciniato-dentato, dentibus vel laciniis plerumque anguste triangulari-lanceolatis usque 8 mm. longis attenuatis vel acuminatis, subrecurvis, petiolo minute piloso vel puberulo; lamina in sicco supra griseo-viridis ad nervos venasque scaberulo-puberula, venis prominulis arcte reticulatis, subtus fere concolor, fere glabra sed ad costam nervosque pilis paucis inconspicuis incurvis obsita, costa tenerrima, nervis lateralibus teneris prominentibus arcuatis, venis prominentibus et arcte reticulatis; inflorescentia bene evoluta non visa, floribus ut videtur paucis breviter pedicellatis; sepala inaequalia 4–7 mm. longa glabra vel glabrata

lanceolata vel ovata cuspidato-acuminata; capsula late ovoidea glabra brunnescens ca. 6 mm. longa, apice abrupte in rostrum rigidum ca. 3 mm. longum contracta.—Guatemala: Dept. San Marcos, above Finca El Porvenir, along Río Cabús to within two miles of Cueva de las Palomas, south-facing slopes of Volcán de Tajumulco, alt. 1,300–1,500 meters, March 16, 1940, *Julian A. Steyermark* 37982 (type in Herb. Field Mus.); leaves membranaceous, light grass-green on both sides.

The material, unfortunately, is incomplete, only two flowers, in fruiting state, being present on the specimen. The foliage is so unlike that of any other *Russelia* we have seen, especially in its deeply laciniate leaf margins with somewhat outcurved laciniations, that we have no hesitancy in describing the plant as a new species.

Veronica arvensis L. Sp. Pl. 13. 1753.—A common weed in many parts of the United States and Canada, this European plant apparently is not recorded from Central America. One recent collection has been made in Guatemala: Dept. Chimaltenango: Procumbent in open meadow, scarce, Cerro de Tecpám, region of Santa Elena, alt. 2,700 meters, December, 1938, *Standley* 58684.

BIGNONIACEAE

Jacaranda Copaia (Aubl.) D. Don, Edinb. Phil. Journ. 9: 267. 1823. *Bignonia Copaia* Aubl. Pl. Guian. 650. *pl. 265.* 1775.—Seibert in his recent excellent account of the *Bignoniaceae of the Maya Area* (Carnegie Inst. Wash. Publ. 522: 387. 1940) does not report this handsome tree from Guatemala. It has been known to occur in British Honduras and from Nicaragua southward to northern South America. One sterile collection attests the presence of the species in Guatemala: Dept. Izabal: Between Virginia and Lago de Izabal, Montaña del Mico, alt. 50–500 meters, *Steyermark* 38872; a shrub; leaves membranaceous, grass-green above, pale green beneath.

ACANTHACEAE

Aphelandra Heydeana Donn. Smith, Bot. Gaz. 18: 209. 1893. —*Heyde & Lux* 4037 from Chupadero, Dept. Santa Rosa,Guatemala, at 1,500 meters, is the type of this species, which is confined to Guatemala, and apparently not common there, at least in regions where recent collections have been made. The following new collections are available: Dept. Guatemala, *Ignacio Aguilar* 303. Dept. Santa Rosa, damp forest near Oratorio, alt. 1,200 meters, *Standley* 60671; a shrub of 1.5 meters, the corolla scarlet.

Aphelandra speciosa Brandeg. Univ. Calif. Publ. Bot. 6: 196. 1915.—The species was described from Chiapas, Mexico, and has been known only from that country. It is, however, common in forests of western Guatemala, where it is an exceptionally handsome and showy plant. Guatemala: Dept. Suchitepéquez: In woodland, Finca Moca, alt. 990 meters, *W. C. Muenscher* 12452.—Dept. Quezaltenango: Near Calahuaché, alt. 1,020 meters, damp forest, *Standley* 67128. Finca Pireneos, below Santa María de Jesús, alt. 1,350 meters, damp, dense forest, *Standley* 68220, 68327, 68336, 68334; a simple shrub 1–1.5 meters high.—Dept. San Marcos: Finca Vergel, near Rodeo, alt. 900 meters, wet forest, Standley 68934, 68969, 68954; a simple shrub a meter high; bracts bright red. Volcán de Tajumulco, above Finca El Porvenir, alt. 1,300–1,500 meters, *Steyermark* 37220; local name Flor de Mayo; leaves firmly membranaceous, dark green above, pale green beneath; bracts coral-red.

Aphelandra Terryae Standl., sp. nov.—Frutex 60–120 cm. altus ramosus, ramis teretibus sordido-ochraceis dense pilis sordidis vel fulvescentibus brevibus adscendentibus vel patulis pilosis, internodiis brevibus; folia breviter petiolata membranacea, petiolo crasso 3–7 mm. longo dense piloso; lamina oblanceolato-oblonga 6–12 cm. longa 2–4 cm. lata acuminata, basin angustam versus longe sensimque attenuato-angustata, supra in sicco fusco-viridis, ad costam pilis longiusculis hirsuta, aliter glabra vel glabrata, subtus vix pallidior ad costam nervosque sparse vel densiuscule pilosa, aliter fere glabra, costa tenera prominente, nervis lateralibus angulo lato adscendentibus arcuatis; spicae terminales simplices corollis exclusis 5–8.5 cm. longae et paullo ultra 1 cm. latae densissime multiflorae; bracteae arcte imbricatae late ovali-ovatae vel rotundo-obovatae 1 cm. longae vel paullo breviores, infimae interdum viridescentes et mucronulatae, ceterae apice late rotundatae et muticae, intus dense sericeae, extus sparse vel dense praesertim prope costam sericeae vel interdum glabratae, fere omnes utroque latere paullo supra medium glandulis paucis parvis orbicularibus arcte aggregatis onustae, bracteolis lanceolato-oblongis striatis ca. 7 mm. longis acuminatis minute pilosulis; calycis segmenta lineari-lanceolata subulato-attenuata bracteolis aequilonga; corolla ut dicitur coccinea 4.5–5.5 cm. longa in alabastro longe attenuato-acuminata extus dense pilis minutis laxis pilosula, tubo 2.5–3.5 cm. longo sursum sensim dilatato, fauce 7 mm. lato, labio superiore ca. 2 cm. longo acuminato dorso paullo concavo, inferiore subaequilongo trilobo, lobis anguste acuminatis; antherae 5–6 mm. longae; capsula immatura oblonga glabra lucida, apice in

stylum abrupte contracta.—Panama: Tucuti, Chepigana District, Prov. Darién, near sea level, March 5, 1940, *M. E. & R. A. Terry* 1377 (type in Herb. Field Mus.).

In Leonard's key to species of *Aphelandra* in *Flora of Costa Rica* (Bot. Ser. Field Mus. 18: 1193. 1938) this would run at once to *A. Sinclairiana* Nees, a species to which it bears little resemblance. In general appearance *A. Terryae* is similar to *A. Deppeana* Nees, but that has dentate bracts.

RUBIACEAE

Bouvardia erecta (DC.) Standl. N. Amer. Fl. 32: 110. 1921. *Catesbaea erecta* DC. Prodr. 4: 401. 1830. *Hedyotis spinescens* Sessé & Moc. Fl. Mex. 22. 1893.—In *North American Flora* this small Mexican shrub is reported only from the State of Puebla, but two collections not then accessible indicate that its range is somewhat wider: Maltrata, Veracruz, May, 1937, *Matuda* 1338. Cordillera of Oaxaca, in 1840, *Galeotti* 2637. There is in the Herbarium of Field Museum an excellent specimen of *Sessé & Mociño* 560, received from Madrid, that agrees perfectly with Puebla collections. This specimen bears the collectors' name *Hedyotis spinescens*, and is evidently part of the type.

Bouvardia nubigena Standl. & Steyerm., sp. nov.—Frutex metralis ramosus omnino glaber, ramis sordide ochraceis subteretibus rimosis; vagina stipularis brevis longicuspidata et interdum pauciaristata; folia opposita petiolata in sicco crassiuscula et subrigida, petiolo 4–8 mm. longo; lamina ovata usque late ovata vel interdum subrhombeo-ovata, 3–5 cm. longa 1.5–3 cm. lata, acuminata vel longiacuminata, basi obtusa usque rotundata, saepe abrupte contracta et decurrens, supra vix lucida, costa nervisque impressis, subtus paullo pallidior, costa prominente, nervis lateralibus utroque latere saepius 4 arcuatis angulo angusto adscendentibus, venis obsoletis; flores ad apicem rami umbellati et 3–4 vel in cymas parvas paucifloras dispositi, pedicellis usque 1 cm. longis sed vulgo brevioribus; hypanthium obovoideum 3 mm. longum basi obtusum vel acutiusculum; sepala anguste linearia viridia in anthesi 6–7 mm. longa, in statu fructifero usque 10 mm. longa, ad margines remote scaberula; corolla coccinea glabra, tubo gracili 2 cm. longo 2 mm. lato, superne paullo dilatato et ad 3 mm. lato, lobis ovato-oblongis suberectis 4 mm. longis obtusis; capsula subdidymo-globosa ca. 8 mm. lata et 6 mm. alta, basi late rotundata.—Guatemala: Dept. Jutiapa, lower edge of cloud forest on Volcán de Suchitán, northwest of Asun-

ión Mita, alt. 2,050 meters, November 18, 1939, *Julian A. Steyermark* 1901 (type in Herb. Field Mus.).

Shrubby, 4 feet tall; flowers scarlet; leaves dull green above, pale beneath. The nearest relative of this species is *Bouvardia laevis* Mart. & Gal., of southern Mexico. The Guatemalan plant has much broader, thicker leaves, and a relatively compact inflorescence.

Bouvardia Steyermarkii Standl., sp. nov.—Suffrutex 30 cm. altus vel ultra omnino glaber sparse ramosus, ramis gracilibus sed rigidis subteretibus pallidis, internodiis foliis brevioribus vel rare longioribus; stipulae triangulari-subulatae 1.5–2 mm. longae; folia brevissime petiolata subcoriacea patentia vel adscendentia, petiolo crassiusculo vix ultra 3 mm. longo; lamina lanceolato-linearis 3–4.5 cm. longa 3–5 mm. lata apicem fere subulatum versus longe angusteque attenuata, basi acuta vel acuminata, supra sublucida, costa impressa, nervis occultis, subtus pallidior, costa tenera prominula, nervis obsoletis, margine revoluto; flores albi fragrantes in cymas terminales foliatas densas paucifloras dispositi, pedicellis rigidis plerumque 7–10 mm. longis; hypanthium obovoideum 2 mm. longum basi obtusum; sepala foliacea lanceolata vel lineari-lanceolata ad anthesin ca. 7 mm. longa sed in statu fructifero usque 15 mm. longa, longiattenuata viridia basi angustata; corolla extus glabra, tubo gracillimo ca. 33 mm. longo et 1.2 mm. lato sursum vix dilatato et fauce 2 mm. tantum lato, lobis patentibus ovato-oblongis ca. 8 mm. longis et 4 mm. latis acutiusculis intus glabris; capsula subdidymo-globosa ca. 6 mm. longa et aequilata basi rotundata.—Guatemala: Dept. Zacapa, forested slopes, Sierra de las Minas, near summit of mountain, between Río Hondo and Finca Alejandria, alt. 1,700–2,000 meters, October 11, 1939, *Julian A. Steyermark* 29671 (type in Herb. Field Mus.). Dept. Jalapa, top of ridge near Minas de Croma, northeast of Jalapa, alt. 1,500–1,700 meters, December 12, 1939, *Julian A. Steyermark* 33110 (sterile, but probably to be referred here).

In the key to species of *Bouvardia* in *North American Flora* (32: 100. 1921), the plant runs at once to *B. erecta* (DC.) Standl., of Mexico. That differs conspicuously in general appearance from *B. Steyermarkii* because of its numerous short, stout, divaricate branches that tend to become spinose, and on account of its much smaller leaves. The sepals of the Mexican species are much smaller.

Chiococca oaxacana Standl., sp. nov.—Rami graciles teretes ochracei vel pallide brunnescentes, novellis viridibus dense puberulis, internodiis brevibus vel elongatis; stipulae virides persistentes alte

connatae ca. 3 mm. longae, vagina lata et fere truncata abrupte in cuspidem aequilongum contracta; folia inter minora petiolata subcoriacea, petiolo gracili 6–13 mm. longo puberulo; lamina lanceolato-oblonga 5–6.5 cm. longa 1.5–2 cm. lata apicem obtusiusculum versus paullo angustata, basin attenuatam versus sensim angustata, supra viridis lucida glabra, costa nervisque haud elevatis, subtus pallidior densiuscule patulo-hirtella, costa gracili prominente, nervis lateralibus utroque latere 4–5 vix prominulis obliquis, venis obsoletis; flores racemosi, racemis simplicibus vel ramosis axillaribus singulis foliis fere aequilongis longipedunculatis, pedunculo usque 3 cm. longo, ramis pedicellisque dense breviter pilosulis, pedicellis usque 3 mm. longis, racemis paucifloris, bracteis minutis late ovatis; hypanthium ovale fere 2 mm. longum dense hirtellum, calyce 1 mm. longo breviter dentato, dentibus late ovato-deltoideis obtusis erectis glabratis; fructus immaturus 4 mm. longus suborbicularis paullo compressus sparse hirtellus.—Mexico: Cerro San Antonio, State of Oaxaca, alt. 1,650 meters, June 26, 1906, *C. Conzatti* 1418 (type in Herb. Field Mus.).

Principally because it was assumed that all Mexican Chiococcas with pubescent foliage belonged to a single species, this collection has been referred by the writer to *C. pubescens* Standl. That species, however, differs in having relatively much broader, ovate or broadly ovate leaves, very obtuse to broadly rounded at the base, and more or less hirtellous on the upper surface. Its inflorescences, too, are smaller, mostly simple, and few-flowered.

In *North American Flora* (32: 286. 1934) the range of *C. pubescens* is given as "Tamaulipas, Puebla, and Oaxaca." The last state probably should be excluded from the range, since the reference pertains presumably to *C. oaxacana*. At the present time only the following collections of *C. pubescens* are at hand: Mexico: San Luis Tultitlanapa, Puebla, *Purpus* 3334, type collection. Victoria, Tamaulipas, alt. 320 meters, *Palmer* 136. El Milagro, Sierra de San Carlos, Tamaulipas, *Bartlett* 11178.

Deppea inaequalis Standl. & Steyerm., sp. nov.—Frutex 1–1.5 m. altus ramosus, ramis gracilibus teretibus, vetustioribus ochraceis, novellis viridescentibus, omnibus in sicco roseo tinctis, novellis minutissime puberulis, internodiis brevibus vel interdum elongatis; stipulae minutae deciduae late triangulares vix ultra 0.5 mm. longae; folia opposita modica petiolata tenuiter membranacea inaequalia, petiolo gracili usque 12 mm. longo sed saepe fere nullo minutissime puberulo; lamina ovato-lanceolata usque anguste lanceolata vel elliptico-lanceolata vulgo 5–12 cm. longa et 2–4 cm. lata longiacu-

linata, acumine sensim angustato interdum subfalcato, basin versus saepius subabrupte contracta et longe angusteque interdum fere ad basin petioli attenuata, supra viridis sparse pilis brevibus laxis conspersa, costa nervisque non elevatis, subtus paullo pallidior sparse minute puberula vel glabra, costa tenera vix elevata, nervis lateralibus utroque latere ca. 7 arcuatis angulo lato adscendentibus marginem fere attingentibus; flores parvi cymosi, cymis laxe paucifloris ut videtur interdum recurvis reductis et fere umbelliformibus, pedunculis gracillimis usque 5 cm. longis sed saepius 1–2 cm. longis, pedicellis gracillimis minute sparseque puberulis usque 8 mm. longis, bracteis minutis; hypanthium late obovoideum ca. 1 mm. longum basi acutiusculum sparse et fere microscopice puberulum vel fere glabrum; sepala viridia maxime inaequalia, unum vulgo multo minus et 1.5–2 mm. tantum longum, alia 3 ca. 4–7 mm. longa linearia usque lanceolata fere glabra; corolla in alabastro acuta extus sparse minute puberula, expansa ca. 4 mm. longa, tubo brevissimo, lobis oblongo-ovatis intus glabris; antherae oblongae acutiusculae ca. 2.3 mm. longae subexsertae; capsula immatura ovalis ca. 3 mm. longa costata sparse minute puberula vel fere glabra.—Guatemala: Dept. San Marcos: Above Finca El Porvenir, along Río Cabús to within two miles of Cueva de las Palomas, south-facing slopes of Volcán de Tajumulco, alt. 1,300–1,500 meters, March 16, 1940, *Julian A. Steyermark* 37974 (type in Herb. Field Mus.). Also No. 37947 from the same locality.

Leaves membranaceous, olive-green above, pale green beneath; corolla white; calyx pale green; growing on the dry, lower slopes. The acute (in bud) corolla indicates that the plant is related to *Deppea cornifolia* Benth., but in that the calyx lobes are minute, triangular, and shorter than the hypanthium.

Gonzalagunia exaltata Standl., sp. nov.—Arbor 18-metralis, trunco 30 cm. diam., ramis teretibus brunnescentibus glabratis, novellis sparse adpresso-pilosis, internodiis abbreviatis; stipulae persistentes e basi ovata longe setaceo-attenuatae usque 1.5 cm. longae strigosae, glabrescentes; folia modica vel majuscula breviter petiolata membranacea, petiolo 6–20 mm. longo, interdum fere ad basin marginato, pilis longis adpresso-piloso; lamina oblanceolato-oblonga 11–21 cm. longa 3.5–6 cm. lata abrupte longe angusteque caudato-acuminata, acumine interdum subfalcato, basin versus longe sensimque attenuata et ad petiolum decurrens, supra in sicco viridis primo laxe adpresso-pilosa sed cito glabrescens et glaberrima, costa nervisque non elevatis, subtus paullo pallidior sparse pilis longis

laxis pallidis adpressis pilosa, in statu adulto glabrata, costa tenera prominente, nervis lateralibus utroque latere ca. 15 subarcuatis tenerrimis obliquis marginem fere attingentibus, venis obscuris subimpressis; paniculae terminales sessiles vel breviter pedunculatae thyrsiformes et angustissimae 14–16 cm. longae et 2.5 cm. latae dense multiflorae, rhachi crassa dense longipilosa, floribus sessilibus in cymulas parvas sessiles vel brevissime pedunculatas plurifloras vel multifloras aggregatis, bracteis linearibus vel lineari-lanceolatis viridescentibus parvis inconspicuis; hypanthium globosum viridescens vix ad 1 mm. longum sparse pilosulum vel glabratum; calyx 4-lobus vix ultra 1 mm. longus pallide viridis, lobis ovatis acuminatis fere glabris; corolla alba extus fere glabra et tantum basi loborum sparse pilis albis gracillimis pilosula, tubo gracili ca. 6 mm. longo sursum vix dilatato, lobis 4 subrotundatis intus glabris; antherae inclusae; ovarium 4-loculare.—Costa Rica: Beside river, basin of El General, Prov. San José, alt. 675–900 meters, March, 1940, *Alexander F. Skutch* 4747 (type in Herb. Field Mus.).

So far as I know, no other species of the genus has been reported as attaining such a height as the present tree. The species is characterized by the combination of almost glabrous, very long-attenuate leaves and small, nearly glabrous corollas.

Paederia ciliata (Bartl.) Standl., comb. nov.—*Lygodysodea ciliata* Bartl. in DC. Prodr. 4: 470. 1830. *Rondeletia volubilis* Sessé & Moc. loc. cit. in syn. *L. mexicana* DC. loc. cit. in syn. *Rondeletia volubilis* Sessé & Moc. Pl. Nov. Hisp. 36. 1887. *Paederia Pringlei* Greenm. Proc. Amer. Acad. 39: 92. 1903.—In *Trees and Shrubs of Mexico* (Contr. U. S. Nat. Herb. 23: 1392. 1926), *Paederia Pringlei* was reported only from the Mexican states of Guerrero and Morelos. Recent collections show that it has a somewhat wider range: Mexico: State of Mexico: Chorrera, Distr. Temascaltepec, alt. 1,230 meters, *G. B. Hinton* 1195, 8078, 7234. Salitre, Distr. Temascaltepec, alt. 910 meters, a vine on cliffs, *Hinton* 4738.—Without locality, *Sessé & Mociño* 1393. The Sessé and Mociño collection is the type of *Rondeletia volubilis*.

Psychotria mima Standl., sp. nov.—Frutex 4-metralis, ramis gracilibus viridibus subteretibus glabris; stipulae virides persistentes erectae et adpressae 5–6 mm. longae profunde bifidae, segmentis semiovatis obtusis; folia magna breviter petiolata firme membranacea, petiolo gracili 1.8–3.5 cm. longo glabro; lamina late elliptica usque oblongo-elliptica 15–25 cm. longa 8–14.5 cm. lata abrupte vel subabrupte acutata, apice ipso subacuto, basi obtusa vel cuneata,

rope vel paullo supra medium latissima, glabra, supra in sicco ıtense viridis, costa basin versus impressa, nervis venisque non levatis, subtus paullo pallidior, costa tenera prominente, nervis ıteralibus utroque latere ca. 11 solemniter arcuatis tenerrimis angulo ecto vel fere recto abeuntibus prominentibus prope marginem junc-is, venis prominulis tenerrimis laxe reticulatis; inflorescentia termi-alis paniculata magna 12 cm. longe pedunculata ca. 23 cm. longa t basi 15 cm. lata subpyramidalis laxissime multiflora, ramis abrupte eflexis gracilibus minute hirtellis omnibus basi bracteatis, bracteis nfimis 7–8 mm. longis lineari-lanceolatis viridibus persistentibus, loribus sessilibus in cymulas parvas paucifloras dispositis, bracteis ymularum minutis; hypanthium vix ad 1 mm. longum minute pube-ulum, calyce vix 0.3 mm. alto minute denticulato; corolla extus ninute puberula vel hirtella in alabastro obtusa infundibuliformis 5–7 mm. longa, tubo basi crassiusculo infra medium abrupte in aucem urceolatum dilatato, ore aliquanto angustato, lobis vix ultra 1 mm. longis late deltoideis subobtusis erectis; antherae inclusae.—Costa Rica: In forest, vicinity of Pejivalle, Prov. Cartago, alt. 600–850 meters, January, 1940, *Alexander F. Skutch* 4589 (type in Herb. Field Mus.); flowers pale yellow; fruit blue (no fruits are present with the type specimen).

In general appearance *Psychotria mima* is strikingly like *P. solitudinum* Standl., collected by Dr. Skutch at El General, Costa Rica. In that species, however, the branches of the panicle are not deflexed, and the corolla in bud is conspicuously 5-tuberculate at the apex; in *P. mima* there is no indication of any such tubercles.

Psychotria Steyermarkii Standl., sp. nov.—Frutex 0.5–1.5 m. altus ramosus, ramis gracilibus teretibus ochraceis, novellis dense pilis patulis pallidis pilosis, internodiis brevibus; stipulae fere liberae 8–9 mm. longae erectae subpersistentes fere ad basin bilobae, lobis linearibus vel fere subulatis attenuatis, basi puberulae; folia modica vel subparva petiolata membranacea, petiolo vulgo 1–2 cm. longo sed interdum multo breviore minute patulo-piloso; lamina anguste oblongo-lanceolata usque fere lineari-oblonga 5–14 cm. longa 1.5–2.5 cm. lata longe angusteque attenuato-acuminata, basin acutam vel acuminatam versus longe attenuata, supra in sicco viridis tantum ad costam densiuscule pilosa, costa nervisque prominulis, subtus pallidior ad costam nervosque breviter sordido-pilosula vel puberula, costa tenera prominente, nervis lateralibus utroque latere ca. 23, nervo altero tenuiore inter quamque parem saliente, tenerrimis prominulis angulo fere recto divergentibus juxta marginem junctis, venis

paucis prominulis laxe reticulatis; inflorescentia terminalis sed interdum pseudolateralis ut videtur interdum recurva usque 3.5 cm. longe pedunculata cymosa e basi trichotoma, ca. 3 cm. longa et aequilata, ramis omnibus basi bracteatis glabris vel glabratis, basalibus suberectis rectis, floribus subcapitatim in capitula pauca saepe tantum 3 aggregatis sessilibus vel breviter pedicellatis, bracteis infimis foliaceis lineari-lanceolatis ca. 1 cm. longis acuminato-attenuatis, superioribus ca. 7–8 mm. longis elliptico-oblongis acutis concavis et subadpressis glabris vel glabratis; calyx ad apicem fructus persistens 1.5–2 mm. longus ad medium vel profundius dentatus, dentibus erectis ovatis acutis glabris; fructus subglobosus 4 mm. longus glaber, pyrenis dorso grosse obtuseque costatis.—Guatemala: Dept. Quezaltenango: On ridge, lower, south-facing slopes of Volcán de Santa María, between Santa María de Jesús and Calahuaché, along great barranco between Finca Pireneos and San Juan Patzulín, alt. 1,300–1,500 meters, January 6, 1940, *Julian A. Steyermark* 33700 (type in Herb. Field Mus.); a small, suffrutescent shrub of 60–90 cm.; leaves thin, dark, dull green above, pale gray-green beneath. Moist banks, along Quebrada San Gerónimo, Finca Pireneos, alt. 1,300–2,000 meters, January 1–2, 1940, *Steyermark* 33461; a shrub of 1.5 meters; fruit oblong-ovoid, ultramarine blue-purple.

The species is a somewhat isolated one, not closely related to any other of Guatemala, or to any Mexican one.

Rondeletia mexicana (Turcz.) Standl., comb. nov. *Siphonandra mexicana* Turcz. Bull. Soc. Nat. Mosc. 21, pt. 1: 581. 1848. *Rondeletia oaxacana* Standl. Field Mus. Bot. 11: 255. 1936.—Both the names cited are based upon the same collection, *Galeotti* 2664 bis, from Oaxaca, Mexico, at 900 meters. Bentham and Hooker, like all other authors, apparently, reduced *Siphonandra* to the synonymy of *Chiococca*, a quite different genus. Who first made the reduction, I do not know, but it is repeated, of course, by the writer in *North American Flora* (32: 289. 1934). The original description of *Siphonandra* is certainly misleading in many respects, so much so that one wonders whether it really could have been based upon the Galeotti collection, which is represented in the Herbarium of Field Museum by a photograph of a specimen in the Delessert Herbarium, and by a fragment of the type of *Rondeletia oaxacana*, from the Paris Herbarium. The description of the corolla and calyx of *Siphonandra* as sericeous would exclude the plant definitely from the genus *Chiococca*, and the description of other parts of the plant agrees no better with a *Chiococca* than a *Rondeletia*. Since there is no reason for supposing

hat Galeotti distributed more than one species under the number ited, it may safely be assumed that Turczinanow was describing the ame plant that I named *Rondeletia oaxacana*, but described it most naccurately.

Rudgea simiarum Standl. & Steyerm., sp. nov.—Arbor 6-netralis omnino glabra, ramulis crassiusculis subteretibus ochraceis, novellis pallide viridibus, internodiis brevibus; stipulae persistentes n vaginam truncatam obscure mucronatam 2.5–3 mm. altam con-natae, vagina intus dense hirsuta, pilis breviter exsertis; folia modica breviter petiolata subcoriacea, petiolo gracili vel crassiusculo 8–15 mm. longo; lamina lanceolato-oblonga usque elliptico-oblonga vulgo prope medium latissima 7–16 cm. longa 2.5–7 cm. lata subabrupte longiacuminata, acumine anguste attenuato, basi acuta vel saepius subabrupte aliquanto contracta et longe decurrens, supra in sicco fusco-brunnescens lucida, costa nervisque prominentibus, venis vix prominulis laxe reticulatis, subtus pallidior, costa tenera prominente, nervis lateralibus utroque latere ca. 8 arcuatis tenerrimis prominulis angulo semirecto vel paullo latiore adscendentibus juxta marginem junctis, venis prominulis laxe reticulatis; inflorescentia terminalis cymoso-corymbiformis dense pauciflora 2–3.5 cm. longe pedunculata, corollis exclusis 2–2.5 cm. lata, basi 3- vel pluriradiata, ramis brevibus crassis rectis vel curvis basi nudis sed alte supra basin minute bracteatis, floribus sessilibus vel breviter pedicellatis, pedicellis crassissimis apice articulatis; hypanthium late columnare vix 1 mm. altum et aequilatum vel latius, calyce fere margineformi 0.5 mm. alto truncato remote minutissime denticulato; corolla alba in alabastro apice obtusa et exappendiculata, tubo 10–11 mm. longo sursum sensim paullo dilatato fauce 3–3.5 mm. lato, lobis ca. 8 mm. longis linearis-lanceolatis apicem subobtusum versus sensim attenuatis intus glabris patentibus vel recurvis; antherae fere toto exsertae lineares 3 mm. longae.—Guatemala: Dept. Izabal: Between Virginia and Lago de Izabal, Montaña del Mico, alt. 50–500 meters, April 5, 1940, *Julian A. Steyermark* 38839 (type in Herb. Field Mus.).

Fresh leaves subcoriaceous, dull, dark green above, dull green beneath; peduncles light green; flowers white. Although the generic position of the plant as here treated is not altogether satisfactory, the species seems more properly referable to *Rudgea* than to any other related group. The stipules do not have the indurate or fleshy appendages that characterize the genus *Rudgea*, but it may be assumed that the dense hairs on the inner surface of the stipule sheath are modifications of them. Otherwise the plant must be treated as a

species of *Psychotria*, with none of whose Central American representatives does it seem closely related.

LOBELIACEAE

Lobelia aguana Wimmer, Repert. Sp. Nov. 38: 86. 1935.—The type, in the Herbarium of Field Museum, was collected on Volcán de Agua, Guatemala, at 3,150 meters, *Kellerman* 7502. The plant is much like *Lobelia laxiflora* HBK., but with more abundant and much larger, more brilliantly colored flowers. It is, in fact, one of the handsomest and showiest of all Central American Lobeliaceae, which is saying a great deal. The following recent collections show that the species ranges rather widely: Mexico: Volcán de Tacaná, western slopes, alt. 2,800 meters, *Matuda* 2893.—Guatemala: Dept. San Marcos: Volcán de Tajumulco, alt. 3,000 meters, in 1934, *K. P. Schmidt*.—Dept. Quezaltenango: Pine-*Abies* forest, Volcán de Zunil, alt. 2,500–3,800 meters, *Steyermark* 34738; corolla bright red with yellow at the base; leaves firmly membranaceous, dull green above, pale green beneath; calyx grass-green, with purplish on one side. Moist, dense forest, mountains southeast of Palestina, alt. 2,700 meters, *Standley* 66323; a simple herb 1–1.5 meters high; corolla yellowish red.—Dept. Sacatepéquez: In damp, mixed or pine forest, slopes of Volcán de Agua above Santa María de Jesús, alt. 2,250–3,000 meters, *Standley* 65234, 65091; a simple herb 1–2 meters high, common at higher elevations; corolla bright red and yellow.—Dept. San Marcos: Along road between San Sebastián at km. 21 and km. 8, 8–18 miles northwest of San Marcos, alt. 2,700–3,800 meters, *Steyermark* 35639; an herb 1.5 meters tall; leaves dull green; corolla crimson-red in the upper half, pale orange in the lower lip.

COMPOSITAE

Aphanactis Standleyi Steyermark, sp. nov.—Herba annua caespitosa acaulis, 2–4 mm. alta; internodiis nullis; foliis oppositis sessilibus decussatis congestis rosulato-caespitosis 3–5-nerviis crassiusculis, 9–16 mm. longis, 7–16 mm. latis, infimis supremisque minimis, late ovatis vel elliptico-subrotundatis, supra ubique parce villosis et viridibus, integris, subtus fere glabris et subalbidis, horizontale patentibus, planis; capitulis in anthesi et in fructu sessilibus 4–5 terminalibus congestis, 3.5–4 mm. altis, 2.5–3 mm. latis, in medio foliorum insertis, pedunculis nullis; phyllariis principalibus (alio extus fulcratis) 6, biseriatis, subaequalibus erectis membranaceis, plus minusve 5-nerviis, ovatis vel late oblanceolatis, acutis, 3–4

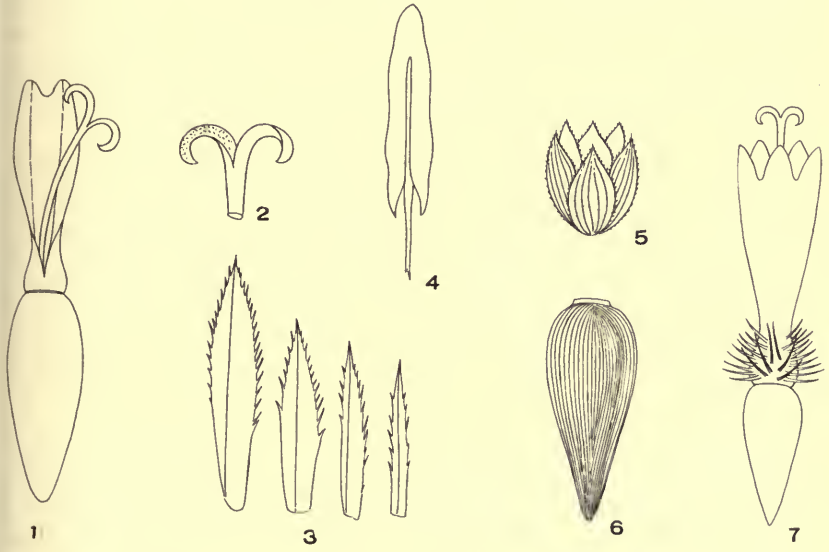

FIG. 3. *Aphanactis Standleyi* Steyermark. Habit drawing (× 2). 1, Ray floret (× 22); 2, Style branches (× 25); 3, Pales in a series from left to right showing the ones towards the center of the heads at left gradually enlarging to those near the outer portion of the heads at right (× 8); 4, A single stamen detached (× 22); 5, A single head with only involucral bracts shown (× 4); 6, Mature schene from disk floret (× 23); 7, Disk floret (× 22).

mm. longis, 1–1.5 mm. latis, glabris vel extimis ad margines minute ciliatis, marginibus scariosis; phyllario alio extus dorso dense villoso late ovato acuto vel obtusiusculo; receptaculo conico; paleis receptaculi diversis paullo asymmetricis tenuibus 1.8–2.5 mm. longis, 0.2–0.8 mm. latis, intimis brevissimis aristiformibus vel elliptico-lanceolatis, extimis lanceolatis vel oblanceolatis acuminatis vel aristatis, intimis parce serratis vel dense ciliatis, extimis ciliatis vel uno latere magis ciliatis, 1-nerviis; corollis femineis radii ca. 5 luteolo-viridibus glabris, quam involucro brevioribus vel vix aequilongis, 1.5 mm. longis (tubo 0.5 mm. longo basi paullo ampliato, lamina erecta cuneata 2-dentata 1 mm. longa, 0.5 mm. lata); corollis hermaphroditis disci ca. 8–10 luteolo-viridibus, 1.5 mm. longis (tubo basi ampliato villoso, 0.5 mm. longo, pilis rectis simplicibus, fauce 0.7 mm. longo glabro, lobis 5 ovatis 0.3 mm. longis); antheris basi acuminatis; achaeniis radii et disci similibus 1–1.3 mm. longis, obesis biconvexis subobcompressis obscure plus minusve 4–5-angulatis glabris fuscis epapposis obovoideis vel turbinato-oblanceolatis, apice truncatis, glabris, minute multistriatulis.—Guatemala: Dept. Chimaltenango: In open meadow, leaves flat on the ground, flowers yellowish green, Cerro de Tecpám, region of Santa Elena, alt. 2,700 meters, December 4, 1938, *Paul C. Standley* 58674 (type in Herb. Field Mus.).

One of the most unusual plants ever found in Central American collections is this new species of *Aphanactis*. Until this collection was at hand from Guatemala, the genus was known only from the subalpine Andean regions of Ecuador and Peru, the original species, *A. Jamesoniana*, being described by Weddell from the Andes of Ecuador, while the second species, *A. villosa*, was described by Blake (Journ. Wash. Acad. Sci. 16: 216. 1926) from subalpine slopes at Chasqui, Peru.

Aphanactis Standleyi is a remarkably distinct species in the genus. It differs from the other known species in its annual root, leaves crowded so closely as to appear rosulate, internodes, therefore not present, the many sessile heads set compactly upon the leafy mass, 2-toothed rays, and much broader leaves. The plant appears to grow flat upon the ground, so minute is it, and since the heads remain sessile even in fruit, the whole plant is no more than 4 mm. tall at the most. In *A. villosa* and *A. Jamesoniana* the tube of the ray flowers is villous, while in *A. Standleyi* it is glabrous; in addition, the disk flowers in *A. Standleyi* are villous only at the ampliate base, while in the other two species both the tube and limb of the corolla are villous. Its annual habit, 2-toothed rays, glabrous tube of the

ray flowers, corolla of the disk flowers pubescent only at the base of the tube, and terminal, multicephalous inflorescence, make *A. Standleyi* stand apart so far from the other species of the genus as to suggest subgeneric rank for it. However, further collections of additional species may reveal that there are no clear subgeneric lines. The combination of epappose achenes, narrow pales, fertile, very minute ray flowers, dwarf, cespitose habit, opposite, 3-nerved leaves, tapering-based achenes, and subbiseriate involucre of *A. Standleyi* place it congenerically with *Aphanactis.*

Archibaccharis androgyna (Brandeg.) Blake, Contr. U. S. Nat. Herb. 23: 1509. 1926. *Baccharis androgyna* Brandeg. Univ. Calif. Publ. Bot. 6: 77. 1914.—The type is *Purpus* 6666 from Cerro del Boquerón, Chiapas, Mexico. A typical collection of the species is at hand from Guatemala: Dept. San Marcos: Small, open barranco bordering meadow, along Quebrada Canjulá, between Sibinal and Canjulá, Volcán de Tacaná, alt. 2,200–2,500 meters, *Steyermark* 35976; a shrub 1–1.5 meters tall.

Archibaccharis Standleyi Blake, var. **aequivenia** Blake, Brittonia 2: 340. 1937.—The species was described from the region of Siguatepeque, Dept. Comayagua, Honduras, the variety from Finca Moca, Dept. Suchitepéquez, Guatemala, at 900 meters, *Skutch* 2056. Another collection of the variety has been made in Guatemala: Dept. Quezaltenango: High barranco along Río Samalá, between Santa María de Jesús and Calahuaché, alt. 1,200–1,300 meters, *Steyermark* 33893; stems ascending; flowers white; leaves thin, dull green above, pale, dull green beneath.

Neurolaena macrophylla Greenm. Proc. Amer. Acad. 39: 118. 1903.—The type of this well marked species was collected at Chicharras, Chiapas, Mexico, and in *North American Flora* (34: 307. 1927) Rydberg reports it only from that Mexican state. The plant, however, extends into western Guatemala: Dept. Suchitepéquez: Finca Moca, alt. 900 meters, in woods, *Skutch* 2055; a shrub or small tree, to 7.5 meters in height; heads yellow.—Dept. Quezaltenango: Damp thicket, Finca Pireneos, below Santa María de Jesús, alt. 1,350 meters, *Standley* 68437; a coarse herb 2 meters high; heads greenish yellow. Finca Pireneos, *Steyermark* 33224; a shrub 2.5 meters tall; flowers yellow; bracts pale green; leaves dark green.—Dept. San Marcos: At middle elevations in forest, above Finca El Porvenir, Volcán de Tajumulco, alt. 1,300–1,500 meters, *Steyermark* 37239; local name Arnica; a shrub of 2.5–3 meters; leaves thin, grass-green on both sides.

Senecio boquetensis Standl., sp. nov.—Herba ut videtur erecta 30–90 cm. alta inferne ut videtur simplex, superne scapis 1–3 terminata, caule crassiusculo tereti tomento laxo albo dense obtecto, inferne dense foliato, internodiis brevibus; folia numerosa majuscula alterna ambitu lanceolata vel oblongo-lanceolata plerumque 16–21 cm. longa et 4–5 cm. lata longiacuminata, basin versus longiattenuata et ad basin petioli decurrentia, ima basi petioli late dilatata et caulem omnino amplectantia, lamina interdum in toto margine irregulariter sinuato-dentata, dentibus latis mucronatis, interdum basin versus pinnatim lyrato-lobata, lobis inaequalibus basin versus sensim decrescentibus late triangularibus plus minusve mucronato-dentatis; lamina supra intense viridis, in statu adulto glabra, in juventute laxe floccoso-tomentosa, basibus pilorum interdum persistentibus et tuberculiformibus, subtus incana ubique tomento subadpresso sed laxo dense obtecta; folia suprema valde reducta et bracteiformia, linearia vel lanceolata 2–4 cm. tantum longa dentata vel pinnatifida; pedunculi valde elongati fere glabri, capitulis paucis vel numerosis dense cymoso-aggregatis; capitula breviter vel longiuscule pedicellata ca. 12 mm. alta et 10 mm. lata aurantiaca, pedicellis fere glabris, basi bracteis numerosis linearibus inaequalibus suberectis fere glabris involucrum aequantibus vel duplo brevioribus fulcrata; phyllaria ca. 12 et 7–8 mm. longa subadpressa et aequalia glabra acuta, obscure trinervia; radii late lineares 5–6 mm. longi patentes; corolla glabra tenuis 8 mm. longa, lobis oblongis 1.5 mm. longis; achaenia juvenilia glabra, pappi setis albis 5 mm. longis.—Panama: Between Cerro Vaca and Hato del Loro, eastern Chiriquí, alt. 850–1,100 meters, December, 1911, *H. Pittier* 5382 (type in Herb. Field Mus.). Open areas, Bajo Mono, Boquete District, Prov. Chiriquí, alt. 1,350 meters, February 2, 1940, *M. E. Terry* 1299.

The species appears to be an isolated one, altogether different in appearance from any other known from Central America.

Vernonia acilepis Benth. ex Oerst. Vid. Medd. 1852: 68. 1852.—The type was collected by Oersted on Volcán de Masaya, Nicaragua, at 2,000 meters. Gleason in *North American Flora* (33: 60. 1922) gives the country erroneously as Costa Rica. The species may now be reported from Guatemala: Dept. Guatemala, near Fiscal, alt. 1,100 meters, dry, rocky thicket, December, 1938, *Standley* 59631. Only one plant was found, but probably the species is plentiful enough during the rainy season. The vegetation about Fiscal is so parched by middle December that few green plants can be discovered, except in particularly well protected spots.

Vernonia Corae Standl. & Steyerm., sp. nov.—Frutex 1.5–4 m. altus; ramulis juvenilibus et superioribus griseo-fuscis dense tomentosis; foliis magnis ad apicem ramulorum numerosis; petiolis griseo-fuscis dense tomentosis 1.5–3 cm. longis; laminis oblongo-oblanceolatis vel anguste obovatis, 12–25 cm. longis, 3.5–9 cm. prope vel supra medium latis, apice sensim acuminatis, basin versus sensim attenuatis, incurvo-serrulatis, dentibus utroque latere 5–25 tenuibus sursum incurvis, 1.5–2 mm. longis, supra olivaceo-viridibus vel pallido-gramineo-viridibus sparse adpresso-pilosulis, nervis mediis et lateralibus dense tomentellis, subtus pallido-viridibus, pilis densius praesertim ad nervos medios et laterales indutis etiam glandulis sessilibus globulosis resinosis conspersis, tenuiter membranaceis, nervis lateralibus utroque latere 7–9; capitulis 1–4 maximis subcampanulatis subsolitariis, umbellatis, pedunculis 4–8.5 cm. longis dense griseo-fusco-tomentosis; floribus numerosis, ca. 125–150; capitulis ad anthesin 2–2.3 cm. longis, 3.5–4 cm. latis; involucro 6–7-seriato graduato, 2 cm. alto: phyllariis imbricatis, apicibus adscendentibus, olivaceo-viridibus, marginibus scariosis et erosis vel fimbrillatis, apicibus mucronatis, superne dense adpresso-scaberulis, exterioribus ovato-rotundis, late ovatis vel oblongis, minute mucronatis, 8–10 mm. longis, 7–9 mm. latis, interioribus similibus, intimis angustioribus minoribusque, oblongis vel late oblanceolatis, prominente mucronatis; floribus lilacinis, 15–17 mm. longis (tubis angustissimis 8–10 mm. longis, faucibus ampliatis infundibuliformibus 4–5 mm. longis extus glandulosis, glandulis sessilibus resinosis, lobis linearibus plus minusve 4.5 mm. longis, 0.5 mm. latis, extus glandulis sessilibus resinosis conspersis et partibus supremis dense hispidulis); achaeniis nigris glabris tetragonis truncatis, apicibus calloso-incrassatis; pappi aristis setaceis pallidis 2.5–3 mm. longis, sursum serrulatis.—Guatemala: Dept. San Marcos: Moist, shaded slopes, between town of Tajumulco and Tecutla (9 miles south and west of Tajumulco), northwestern slopes of Volcán de Tajumulco, alt. 1,800–2,500 meters, February 27, 1940, *Julian A. Steyermark* 36787 (type in Herb. Field Mus.). Between Todos Santos and Finca El Porvenir, middle slopes of Volcán de Tajumulco, alt. 1,300–3,000 meters, March 1, 1940, *Steyermark* 36979. Along road above Barranco Eminencia, alt. 2,700 meters, March 14, 1939, *Standley 68574*.

This new species of *Vernonia*, named for Cora Shoop Steyermark, wife of the junior author, because of her special interest in the genus, is related to *V. Salviniae* Hemsl., with which it has been confused, but it is amply distinct from that species. *Vernonia Corae* has lilac flowers only 15–17 mm. long, while *V. Salviniae* has deep purple or

darker flowers 24–28 mm. long. The pappus of *V. Corae* is only 2.5–3 mm. long, that of *V. Salviniae* 5–10 mm. long. The leaves in *V. Corae* are pale or olive-green on the upper surface and thinly membranaceous, while those of *V. Salviniae* are dull, dark green and of a firmer texture. The teeth on the leaf margins of *V. Salviniae* are short and straight, pointing upward and outward, but those of *V. Corae* are longer, more slender, and conspicuously incurved. One of the most distinctive characters is in the involucral bracts, those of *V. Corae* being dull or olive-green, conspicuously scarious-margined, the tips erect or ascending, and the outer surface densely appressed-scaberulous; those of *V. Salviniae* are dark, rosy purple, firmer in texture, conspicuously squarrose, and the outer surface is provided with shorter, non-scaberulous pubescence. The pubescence of the upper and lower leaf surfaces is quite different in the two species, that of *V. Salviniae* being more dense and of longer hairs, with more numerous sessile glands on the lower leaf surface.

Vernonia Salviniae was described and illustrated with an excellent plate by Hemsley in *Biologia Centrali-Americana* 2: 73. *pl. 41.* 1881. The colored plate shows the rosy purple, squarrose bracts of the involucre and the deep purple flowers characteristic of the species. The type, which was collected in Guatemala at "Las Nubes, Cerro de Zunil, 4,350 feet, *Salvin,*" is preserved in the Kew Herbarium, and has not been seen by the authors, but the many collections which have been made since from the type locality verify the authenticity of the color of the flowers and bracts. This species is common throughout the Occidente of Guatemala and is much commoner than *V. Corae,* having a wide range. *Vernonia Corae* is confined to the moist banks of barrancos and smaller streams of Volcán de Tajumulco and Volcán de Tacaná, while *Vernonia Salviniae* is a very common shrub of the lower cloud forests all the way from Volcán de Zunil and Volcán de Santa María to the Cerro del Boquerón in the State of Chiapas, Mexico.

The following collections of *Vernonia Salviniae* have been seen by the authors: Mexico: Chiapas: Cerro del Boquerón, August, 1913, *Purpus* 6669.—Guatemala: Dept. Quezaltenango: Finca Pireneos, below Santa María de Jesús, alt. 1,350–1,380 meters, March, 1939, *Standley* 68325 (local name Araña), 68303. Volcan de Zunil, alt. 1,900 meters, August, 1934, *Skutch* 953.—Dept. San Marcos: Barranco Eminencia, above San Rafael Pie de la Cuesta, alt. 2,100–2,400 meters, March, 1939, *Standley* 68664. Between Canjulá and La Unión Juárez, near southeast portion of Volcán de Tacaná, alt. 2,000–3,000 meters, February, 1940, *Steyermark* 36417.